MILITARY REVIEW

VOLUME XXXV JANUARY 1956 NUMBER 10

CONTENTS

COMMUNICATIONS ZONE ASSET OR LIABILITY? 3
Colonel Thomas F. Donahue, Ordnance Corps

BEST DAMN OUTFIT IN THESE PARTS 13
Brigadier General Jeremiah P. Holland, United States Army

THE HUMAN BALANCE SHEET 16
Major General Kazimierz Glabisz

TIME TO THINK 25
Lieutenant Colonel William O. Quirey, Artillery

COMMUNIST SUBVERSION OF THE ROMANIAN ARMY 29
Benson Lee Grayson

THE HELICOPTER IN EARLY LINK-UP OPERATIONS 33
Lieutenant Colonel Stuart M. Seaton, Artillery

TRANSLATORS AND INTERPRETERS IN THE ARMED FORCES 43
Major Jack A. Dabbs, United States Army Reserve

LIEUTENANTS NEVER CRY 50
Lieutenant Colonel Starr West Jones, United States Army Reserve

ARMY AVIATION 53
Lieutenant Colonel George L. Morelock, Jr., Artillery

MILITARY NOTES AROUND THE WORLD 65

FOREIGN MILITARY DIGESTS 75
Will Aviation Supplant the Other Branches of the Armed Forces? 75
The Effects of Atomic Weapons on Military Operations 82
Fighting Formations of the Future 91
The Importance of the Chinese Railway System 98
Coexistence and a Free World 102

BOOKS OF INTEREST TO THE MILITARY READER 111

This copy is not for sale. It is intended for more than one reader.
PLEASE READ IT AND PASS IT ALONG

MILITARY REVIEW STAFF

EDITOR IN CHIEF

LIEUTENANT COLONEL WILLIAM D. MCDOWELL

NORTH AMERICAN EDITION

Editor: LIEUTENANT COLONEL CHARLES A. CHRISTIN, JR.

Assistant Editor: MAJOR JOHN J. EARLEY

SPANISH-AMERICAN EDITION

Editor: MAJOR GILBERTO GONZÁLEZ-JULIÁ

Assistant Editors: MAJOR TOMÁS H. GUFFAIN, CAPTAIN ORLANDO ORTIZ MORENO

BRAZILIAN EDITION

Editor: LIEUTENANT COLONEL HERMANN BERGQVIST

Assistant Editor: LIEUTENANT COLONEL TÁCITO T. G. DE OLIVEIRA

Administrative Officer

MAJOR LINO BONUCCI

Production Officer

MAJOR JAMES A. TRENT

The printing of this publication has been approved by the Director of the Bureau of the Budget 2 July 1953.

MILITARY REVIEW—Published monthly by the Command and General Staff College at Fort Leavenworth, Kansas, in the English, Spanish, and Portuguese languages. Entered as second-class matter August 31, 1934, at the Post Office at Fort Leavenworth, Kansas, under the Act of March 3, 1879. Subscription rates: $3.50 (United States currency) a year in the United States and other countries of the Western Hemisphere: $4.50 a year in all other countries. Individual reprints, except for copyrighted material, are authorized, provided credit is given the MILITARY REVIEW, Command and General Staff College, Fort Leavenworth, Kansas.

COMMUNICATIONS ZONE ASSET OR LIABILITY?

Colonel Thomas F. Donahue, *Ordnance Corps*
Ordnance Officer, Headquarters, Seventh Army

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

IN "Logistics of the Future" which appeared in the September issue of this magazine, we pointed out the inherent dangers of the pipeline complex. The belief that armies, and particularly United States armies, must be supported by great masses of supplies extending from the producer or vendor to the battlefield is deep rooted in the military. The reasons for the author's conviction that these great masses or stockpiles are unnecessary, a liability rather than an asset, were explained in considerable detail. While that thesis covered the field, the application to the communications zone (ComZ) warrants a more detailed analysis.

During wartime the first objectives have been to equip the initial force and to build up levels in additional depots and maintenance establishments in the continental United States. Then based upon priorities, assuming more than one theater in a global conflict, successive stockpile operations are planned. Each theater becomes a replica of the homeland with a complicated system of depots organized into a ComZ.

To evaluate this secondary base of operations between the homeland and the frontline troops, the ComZ, is extremely difficult. It is almost impossible, for example, to obtain an unprejudiced opinion of the value of ComZ from those who served in the European Theater of Operations during World War II. If the final decision as to whether ComZ in any theater was an asset or liability were left to a popular vote, there is little question of the outcome. ComZ had its supporters—Ernie Pyle was one, and even Bill Mauldin, the cartoonist, wrote sympathetically of the base section workers as contrasted to the rear echelon commandos.

The question, however, is not to be decided by the emotions nor by the ballot box. After all, the last war was fought and won. Possibly the ComZ of the future will differ from that of World War II as a helpful boy scout differs from the base section military police in the average base section of 1944.

ComZ in the Future?

Will there be a ComZ in the future? If so, how vast will it be? In 1948 the author listened to a forecast of supply operations by Major Charles Billingslea who had served with the airborne infantry during World War II. He drew a picture of future supply to an overseas theater by airfreight, with a plane landing every 30 seconds and taxiing to the various de-

Unless we take positive measures to reverse the trend, we shall have a ComZ, a line of communications, a support command or some such institution on a vastly more elaborate scale for many years to come

pots in concentric rings surrounding the landing field. ComZ would then take over, but it would eliminate the port of entry. Visionary, a dreamer, we thought and dismissed the idea. In fact in one respect where he advocated light, cheap vehicles including tanks, we have gone in the opposite direction.

Others have developed this theme a bit further, including a more famous paratrooper, Lieutenant General James M. Gavin. Another heavyweight among the military, Field Marshal Montgomery, writing on "The Changing Face of War" in the January 1955 issue of *The Army Combat Forces Journal*, advocated the streamlining of the supply system of the armies. Forget the roads and the rails. Use vertical-lift aircraft from base depots well in the rear to forward maintenance areas where divisions will pick it up by vehicles having cross-country capacity. (Why not helicopters, or why not drop it in the division area in the first place?)

Field Marshal Montgomery goes on to say such a supply organization would do away with the "tail" of the modern army with its vast array of units and headquarters. He concludes with a statement with which I am sure we all agree:

In the scientific age into which we are moving, which is also an age of ever-increasing costs, governments have got to ensure that their armed forces and security measures are built up within a framework of economic realities.

Colonel Thomas F. Donahue is the author of "Logistics of the Future," which appeared in the September 1955 issue of the MILITARY REVIEW. *During World War II he served with United Kingdom Base as Ordnance Officer. He was on the Ordnance Staff of Sixth Army at the Presidio of San Francisco, California, from 1947 to 1950. He was next assigned to Letterkenny Ordnance Depot where he subsequently assumed command from 1951 to 1953. He is currently serving as Ordnance Officer at Seventh Army Headquarters.*

Field Marshal Montgomery in this article is outspoken on many controversial subjects. In the furor which his comments arose, the urgency of revising our logistics may well be ignored.

Unfortunately, prophecies do not always come true in a literal sense. There are prophets and prophets. It is not necessary to go back to the Delphic Oracle, to Nostrodamus, nor even to Jules Verne, Edward Bellamy, and H. G. Wells. Arthur Brisbane, the editorial writer, predicted in the late twenties that by 1950 every well-to-do American would have his own plane parked on the roof of his house. It did not quite come off however, possibly due to the depression and the great war.

If we agree with the present-day prophet, we classify him with those we cherish, with Bellamy let us say. If we disagree, or if the prospects are unpleasant to contemplate, we condemn the writer to the company of Wing Anderson (*Seven Years That Changed the World*) who predicted the triumph of communism over capitalism, or George Orwell (*Nineteen Eighty-Four*) who created Big Brother and Thought Control as symbols of the police state and eventually the slave state. In either case we do little or nothing to change the fate in store for us. Possibly there is nothing we can do. Regarding the future role of ComZ, however, the choice is definitely ours.

Latter Day ComZ

Before we make the decision, there is another precinct to be heard from for this is by no means a one-sided argument. What have the logisticians, particularly those in the technical services who are proponents of the bigger and better ComZs, been doing? Let us review briefly.

Almost immediately following World War II there appeared a number of studies recommending reorganization of the ComZ. The principal result was the development of the logistical division which was

strictly tables of organization and equipment and commanded by a major general. This last concession to pomp was considered of great importance, but the reasons escape me for the moment.

The logistical division would support the corps and organize the advance section and the intermediate section. Did the logistical division reduce the complexity of ComZ? A visit to the Logistical Exercise which has been held annually at Fort Lee or Camp Pickett, Virginia, will disillusion the most skeptical.

Have we stopped with the logistical division? Not quite. There are later developments. Among these are the Theater Support Command and the Field Army Support Command. The Theater Support Command is the World War II Services of Supply (SOS) or ComZ on a vastly more elaborate scale that parallels the field armies on the organization chart. Operations are delegated to support commands organized by the present technical services.

The Field Army Support Command would duplicate this organization within the field army. Here we have ComZ as an organic part of the field army. The support command would parallel the corps on the organization chart and "relieve the army commander of logistical and administrative functions." The Field Army Support Command would ensure that logistics support within army is held to the minimum, 2 to 3 days' supply, 3d echelon maintenance, and hospitalization for 2 or 3 days.

The objectives of this new setup within the army are best expressed by the following quotation:

The steady encroachment of army rear on advanced section must be ruthlessly reversed or field army will absorb the entire ComZ, thereby becoming theater army, since the latter will have nothing to control.

Is that in itself such a bad idea?

While we have attempted only to highlight the principal features of the organization, there are other commands or sections, such as the coastal command and the direct support command. The advanced section was mentioned previously. In this maze of organizations, each with its vast array of depots and depot complexes, supplies for the Army are juggled until finally they reach the troops.

This concept is as close to ComZ of World War II as possible—a rose by some other name. It is diametrically opposed to the simplified supply principles offered by Billingslea, Gavin, and Montgomery. And yet the basis, the justification for the support command, is allegedly the new look, the changing face of war.

Improvements in methods within a set framework can be nullified by the rigidity of the entire pattern. Ship-to-shore conveyors, aerial resupply companies, helicopter units to replace the Red Ball Express, convertiplanes, improved Detroit assembly lines; all of these are futile until we have streamlined the organization and eliminated the extraneous and the duplication. It is insufficient to restate old objectives and by pure semantics pretend that the old has become the new merely because we attach a new title.

ComZ in World War II

Even if we refuse to accept the concept that logistical divisions or the support commands are the old ComZ in another guise, there is sufficient similarity to warrant a brief review of some of the failings of ComZ in World War II. All of these envision a disproportionate share of the manpower in the theater. They are equally wasteful of foodstuffs and the materials of war. Yet the evidence currently available would indicate that if we were engaged in a global war in the near future, the logistical support would be similar to the ComZ of World War II.

Logistical Support of the Armies, in the

subseries European Theater of Operations World War II, by R. G. Ruppenthal, devotes considerable space to the organization and the reorganizations and the continual jockeying for position by the SOS commander. Power and prestige were primary concerns, a greater and greater proportion of the total personnel strength to justify that power and prestige were secondary objectives. Service to the armies was taken for granted. We might shrug this off as a reflection of idiosyncracy of the SOS, later ComZ, commander. Since many of the deficiencies existed on a lesser scale in North Africa, Italy, and the Pacific, however, we must concede that they are inherent in ComZ.

Dr. Ruppenthal's book is not exactly a critical analysis. It was read and approved by the principals prior to publication. The SOS came into being and evolved into ComZ. He reports the various high-ranking officers who served in various capacities, changes in organization, troop strengths at various stages, tonnages moved, and problems encountered. There is surprisingly little editorializing, but the few such comments are revealing.

One example is his appraisal of Depot G-25, at Aschurch, England, where the assembly line "did not quite attain the Detroit standard of efficiency," or "work frequently came to a standstill, and many man-hours were lost while brooms were wielded to prepare for inspections by high-ranking officers." These are possibly the understatements of the century. Of the Red Ball Express he admits losses through deliberate sabotage of vehicles by overworked drivers and through cargo diverted to the black market. When VIII Corps lacked ammunition in France, investigating officers found "so many people and agencies had become involved that the entire matter was hopelessly entangled and beyond clarification."

Were the weaknesses of the SOS the fault of leadership? Definitely not. There were innumerable examples of outstanding leadership. Was it failure to work long hours? Decidedly not. Some units worked 70, 80, and even 90 hours per week to get the job done. Too much of the effort had no meaning. This led SOS officers at Cheltenham, England, to paraphrase Churchill's tribute to the Royal Air Force in referring to SOS: "Never have so many strained so much to produce so few."

The ComZ in World War II was organized under almost ideal conditions. The friendly countries involved had been previously defeated by aggressor forces and initially, at least, welcomed us with open arms. Liberated countries cooperated splendidly. Citizens of these nations professing ideologies differing from ours subordinated these to aid in the fight against the common enemy, fascism. Possibly never again shall we receive such wholehearted cooperation or have so little to fear from internal forces, partisans, or guerrillas espousing the aggressor cause. Even the threat from the air was minor.

Contrast with this the opposite condition, an area occupied but not friendly, with roving bands of partisans; or a friendly country with a high percentage of the population ideologically sympathetic to the enemy. Try to envision the manpower necessary to protect the stockpiles, to operate transportation, and to ensure delivery of supplies to the army. The possibilities for sabotage are practically unlimited. Yet the ComZ in Europe in World War II with everything in its favor was far from a howling success. What were some of its weaknesses?

Overorganized and Overmanned

The ComZ was overorganized and overmanned. Just before D-day it was decided that the strength of ComZ on the European Continent should be approximately one-third that of the armies. This was in numbers of men in uniform only. If we count the clerks, stenographers, drivers, technicians, and indigenous laborers and add

the residue in the United Kingdom Base, strength was about equal or in favor of ComZ. Originally the base sections were divided into districts with one or two senior officers stationed locally to inspect ComZ installations. From 1 or 2, these districts mushroomed to 100 or more officers with several hundred enlisted men and civilian helpers. In Marseilles during the summer of 1945 a base section, a district, and a major port all attempted to function in the one city. The confusion was compounded.

The ComZ absorbed far more than half the tonnage shipped overseas, less that required for initial equipping of the troops. More than three-fourths of ComZ effort was internal. The effort expended in preparing favorable tables of distribution was at least the equivalent of two divisions. The net return to the expeditionary force was negligible.

Millions of man-hours were wasted by ComZ not only in sweeping streets but in useless construction and processing. For one example, vehicles were shipped overseas in crates to save shipping space. These were new vehicles fresh from Detroit. Once assembled, a jeep might pass through six or more processing points before it reached the troops. At each point it was made ready for issue and checked out. The labor wasted in this procedure exceeded the total expended in the manufacture, and the consumption of parts and assemblies was fantastic.

Innumerable units were included in ComZ ranging in size from small medical malaria-control squads in the Pacific to ordnance base shop battalions in Europe which never engaged in the mission contemplated. Functions were performed by combat troops or civilian shops in liberated countries. Yet these units consumed their full share of available supplies.

Waste in the ComZ stemmed in no small measure from misguided attempts to give service. The assembly lines mentioned by Dr. Ruppenthal are an example. Since rebuild lines had first priority, it was easier to get a rebuilt engine than a spark plug. The reserve stock to support this exchange added thousands of tons, and the replacement parts additional thousands, until the total becomes a staggering figure.

The ComZ attempted to create a series of permanent type supply centers in rear of the field armies. Nowhere in the United States is a finer setup than the above mentioned Depot G-25 at Aschurch, England. Whereas G-25 had acres of steel bins of the latest type and the best in materials handling equipment, many permanent supply installations in the United States still use old wooden bins in dilapidated wooden buildings. The ComZ planners apparently ignore the fundamental principle relating to liquidation of initial costs. On the contrary, even after this huge expenditure, costs in terms of manpower are excessive.

We could go on indefinitely. We believe it sufficient to conclude this section with a word on morale. The ComZ had an incalculable effect upon the morale of the combat troops, and in warfare it is conceded that the spiritual is to the physical as three to one. But this effect on combat troop morale was as nothing compared to the ComZ effect upon its own service troops. It was more like a sentence than an assignment to be sent to a ComZ command or installation. The increase in efficiency upon escape to an army was marvelous to see. The mock discipline, the wasted effort in wielding brooms and mops for days on end, the duplication, the confusion, the frustration, and the manifestations of sadism by some commanders were over. Even release from a ComZ hospital was frequently considered a pardon. To many former officers and men, ComZ to this day remains a horrible nightmare.

The mere fact that ComZ in World War II was inefficient is not in itself justification for abandoning it. Who will receive and store the vast supplies for the modern

army? Is not ComZ the lifeline of the army? If we need an army, then we certainly need ComZ. In the new look, with small self-contained units operating over vast areas, we need more, not less, service troops. Or do we?

By its very nature ComZ with its depots and vast storage areas is fixed, not fluid. In this respect, if we assume the frontline as fluid, then we have a paradoxical situation. Warfare cannot be fluid if tied to a fixed line of communications. Isn't this an example of the Maginot Line thinking applied to logistics? Our Maginot Line is now at right angles to the front and fixes the front just as surely as the original network of pillboxes and obstacles.

History is full of examples where an army retreating before a numerically superior enemy was forced to withdraw toward its base of supply. And this base was frequently the very city the defending army wished to deny to the aggressor. The retreat toward Moscow of the Russian Army before Napoleon was an example.

Attack in the West by W. G. F. Jackson reveals that Napoleon's first great successes against the Piedmontese and Austrian Armies resulted because the Austrians were tied to a base of operations. If the two opposing forces had united, the numerical superiority would at least have made his task far more difficult. General Gamelin, in World War II, reputedly a disciple of Napoleon, overlooked this phase of the master's career when he conceived or at least accepted the Maginot Line doctrine. Surprise, speed, and high morale, the principles which led to Napoleon's success, are incompatible with fixed bases. Sir Richard Gale's foreword to Jackson's study stresses "concentrations in terms of time" which in essence is the basis of these logistical studies.

For a classic example of an army tied to a base not logistical we need only recall the Army of the Potomac in our own Civil War. The ring of fortresses around Washington was considered inadequate protection. The enemy must never be permitted between the Army and Washington.

Clausewitz warns against the delusion of relying upon apparent advantages due to the army's relation to its base of operations. He points out that the base of an army forms a structure in which three elements are blended, and upon which the army is dependent. The three elements are: resources of the district, the depots for stores established at various points, and the province out of which these stores are collected. These are separated in space. With our army fighting on foreign soil, only one of the elements is applicable, and the point we hope to make is that the depots themselves are not applicable without the other two.

All the advantages of terrain and natural obstacles may be waived to protect the line of communications. Combat commanders are fixed not only in defensive action but also in the offense. If supplies can come from but one direction, then the army can attack in only one direction.

One of the arguments for the new ComZ, which is to engulf the field army rear area, is that it will relieve the field army commander of logistical responsibility and, therefore, increase his fighting potential. This helps like a manager helps his fighter in the ring by climbing on his back or holding his legs. If the army with this divided responsibility fails, who takes the blame?

The ComZ is a liability rather than an asset because it establishes or interposes an artificial time barrier which might well prove fatal. Assume an army is stationed in a friendly country with 60 to 120 days of supply in the ComZ depots. An artificial resupply time has been established predicated upon these reserves. Loss of subsistence or even gasoline in ComZ may be compensated for in part at least by levying on the country. Loss of munitions in reserve may prove fatal. The

homeland, the true base, is not geared to replace the munitions within the time limit of the remaining stocks. And such a loss is quite possible as a result of paratroopers, bombing, sabotage, or similiar forms of attack.

The Impending Conflict

Let us consider two opposing philosophies: a bigger and better ComZ, or no ComZ. One is positive, the other negative. Which has the greater appeal to the Armed Forces and to the Nation? There is little doubt.

We as a people are positive and profligate by nature. The idea of a soldier subsisting on a handful of rice a day is repulsive to us. The sky is the limit in time of war where our soldiers are concerned. If ComZ means better food, more recreation, then we are all for it. The "haves" should not field a "have not" army.

The ComZ appeals to our organizing ability. The ComZ, logistical divisions, and support commands all start with organization, bigger and better tables of organization and equipment, more rank, and more prestige.

The British were always amazed at the vastness of our staffs and headquarters. On one occasion I recall that the consolidated American group and battalion staffs to run an activity we took over from the British exceeded the total number of persons they had utilized. Volume had increased, it is true, but not sufficiently to justify the increase. Dr. Ruppenthal takes cognizance of this in his study of European Theater logistics. The British Army has its faults, but overmanning of supply installations is not one of them.

Can we do without a ComZ? If we consider the buildup for *Overlord*, almost 25 million tons of which 7 million tons were produced locally, and continue to plan on this scale, the answer is definitely, "No." Tonnage procured for May 1944 alone was 600,000 tons. As ammunition and vehicles predominated during May, the tonnage by technical service was not exactly representative. By contrast, the air shipment from the United Kingdom Base to France totaled 40,000 tons from D-day to 16 September, a negligible quantity.

Was this tonnage necessary in World War II? Will greater or lesser amounts be necessary in a future all-out war? What is the minimum required?

Pushbutton Warfare

Possibly the first step in the analysis is to discuss the possibility of pushbutton warfare eliminating any requirement for a field army. In 1943 and early 1944 we were repeatedly assured that there would be no necessity for invasion of the European Continent. High altitude bombers with fighter cover were rapidly bringing the Nazis to their knees. Provision of fighter cover had eliminated the mistake that was the basic weakness of the Luftwaffe in the Battle of Britain. Again we had overwhelming air superiority in Korea. Have the warnings of *Disaster Through Airpower* been forgotten so soon?

But wait. That is airpower, not atomic warfare. In fact we never employed atomic warfare or guided missiles in Korea and were not permitted to engage profitable targets for heavy bombers on the mainland. If we stay ahead in the atomic stockpile race with a strong air force and guided missile program, we do not need a land force.

This line of reasoning leads to several interesting possibilities. Other nations emphasizing a guns for butter program may catch up. That places the balance back on the land force. Aggressor industrial centers may be more easily dispersed. Without an adequate land force to oppose him, the aggressor may indeed occupy the entire European land mass and utilize the industrial centers in friendly countries. This accomplishes dispersion in areas

which we would be reluctant to attack or destroy.

The philosophy of land atomic warfare is based upon profitable targets—upon canalizing the enemy forces into large masses. A strong land force is essential to this phase of atomic warfare. Neither the martyrdom of Mitchell nor the pleadings of a legion of de Severskys can challenge the validity of this argument.

The prospects of sitting back and trading cities through pushbutton techniques are alarming. The longer the struggle continues on this basis, the greater the odds in favor of the nation with the greater manpower resources during the final ground phases.

The most suitable analogies, and frankly we recognize the fallibility of analogies, are to be found in the realm of sports. If we consider baseball, we realize that the New York Yankees of the Ruth-Gehrig era were phenomenally successful with the big punch, the long ball hitters. In the later overemphasis on this attribute, we gradually lost sight of the fact that the Yankees were a well-balanced ball club. A few years back the New York Giants broke the team record for home runs and finished in the second division. The over-all slowness of the team failed to compensate for the long ball, the atomic power.

Possibly the better analogy is in another sport, in the prize ring. The fighter with the knockout wallop, and nothing else, may be successful against other punchers with lesser ability. Against a skilled adversary, however, he is powerless. The second Dempsey-Tunney fight in Chicago might be cited as a classic example. And wars unfortunately are seldom finished with one blow with or without the long count.

For those who question the wisdom of a strong army to support atomic power, we recommend a review of General J. Lawton Collins' testimony before a congressional committee investigating the claims of an ammunition shortage in Korea. General Collins offered to stake his military reputation on the assertion that all the artillery shells and air bombs our national industrial might was capable of producing were insufficient to prevent supplies from reaching the Communist frontlines in Korea. The reason for this, he stated, was that the Oriental carried supplies forward on A-frames on his back. The long, ant-like supply line failed to offer a profitable target even for conventional artillery or bombs. Can we reasonably anticipate a future aggressor army massing to provide a profitable mass for the atomic weapons?

The answer is obvious. Oversimplification, sublime faith in the power of publicity, and reliance on extravagant claims which have been twice proved unreliable may prove our undoing. Admiral Carney was recently quoted on the wisdom of hedging our bets.

The Problem

We still need a strong army on the ground. We require logistical support geared to the new doctrine of dispersion and mobility. The situation demands that we reorganize our land forces to ensure such adequate logical support with minimum expenditure of manpower and materials. The next step then is to consider the minimum essential requirements. The great bulk of supply is handled by three technical services: Ordnance, Quartermaster, and Engineers. Lesser amounts are supplied by Signal, Transportation, Medical, and Chemical.

Ordnance tonnage is primarily vehicles and ammunition. In the evolution of faster, lighter armored vehicles consuming less fuel, and with repair close to the combat troops, we can cut tonnages by one-half. Replacement of spark plugs and pinion gears will eliminate vast reserves of engines and heavy assemblies. The echelon repair system and replacement of assemblies must go.

If we utilize aircraft and base the carrying capacity on weight instead of ship space, the total saving will be appreciable. During World War II we saved initially over 50 percent of ship space by packaging vehicles in 2- or 5-unit packages which were later assembled. The heavy crates added considerably to the cost and weight, but reduced the bulk or ship space which is based upon the cube. From this initial saving must be deducted construction materials, foodstuffs, and other items which resulted in a net loss. In one North African assembly plant a few thousand Arabs were utilized to increase the production of an ordnance company by 40 percent. True, it cost only a red cap plus a few cents a day per worker, but where did the shelter and foodstuffs come from?

As atomic weapons replace conventional ammunition, individual items are greater in size, but with fewer expended, total tonnages are materially reduced. When propulsion by powder or fuels is replaced by atomic energy, the saving may be 50 percent in artillery shells, the great bulk of ammunition.

Food and gasoline will be reduced initially by approximately one-half through elimination of the ComZ. Further reduction in food tonnage depends upon how palatable new quartermaster concentrates are and the degree of austerity we are willing to accept.

For gasoline, the red blood of the combat forces, the solution is in the hands of the scientist. For smaller transport vehicles we still calculate gasoline requirements in terms of miles per gallon. For tanks and similar vehicles the accepted method is gallons per mile. For these, eventually, we must adapt atomic energy, first through boilers, later directly to pumps in the hydramatic drive or to the final drive itself. Can we afford gasoline pipelines in the future? Do we need them?

Engineer combat units consume a relatively small percentage of engineer tonnages. Bridge units unfortunately require greater quantities. Use of lighter weight alloys will reduce this. Elimination of heavy construction units, ComZ type, will save almost one-half the total tonnages.

Each of the foregoing can easily be expanded into a lengthy treatise. Elimination of one objectionable feature frequently presents a greater one. If an army is to be restricted to one support area with minimum levels, planes serving the army will be forced to carry gasoline until such time as planes are driven by atomic energy. Carrying enough fuel for the return trip would practically eliminate cargo for long flights. Can we count upon air superiority?

But we have not covered the field. What about communications? Can we dispense with Spiral-4 wire, tons and tons of it, to cover the greater distances between command posts? Conventional radio VHF, UHF, and radio teletype all have disadvantages due to interception, compromise, line of sight limitations, or jamming. We must have a telephone, or must we? The specific solution to the vital communications problem is not particularly germane to this discussion. It is sufficient to assert unequivocably that laying of Spiral-4 or WD-1/TT between isolated combat groups of one division dispersed over several miles of front and up to 125 miles in depth is impracticable. The solution may be utilization of scramblers, the use of small aircraft for relay stations, the application of homing devices on preset small guided missiles, or more probably, means still in the development stage. Neither communications lines, nor pipelines, nor truck lines (Red Ball Express), nor any other lines which rest on the earth's surface are compatible with the new look in warfare.

Supply of replacements and evacuation of the sick and wounded by air direct to the homeland from army rear present innumerable advantages. Elimination of the

replacement depot in itself is a desirable feature. Convalescence will be hastened if the seriously wounded are no longer required to jump to attention every half hour to meet base section disciplinary requirements.

Prisoners of war installations and military government headquarters present additional problems. Prisoners of war can be absorbed on parole, if dependable, or turned over to liberated local governing bodies. There will be far less requirement for military government if we eliminate the ComZ. Possibly the ballyhoo of liberating cities and areas, exploited but not originated by Napoleon, is losing its effectiveness after several hundred years.

The elimination of ComZ must be a gradual development. Possibly the first phase is development of not one beach tied to a fixed line, but a series of ports and sites for beach loading operations capable of supporting the army moving in any direction. Supplies are then lifted to the army rear area where they are augmented by critical materials coming in direct from the homeland by air.

Conclusion

The principle argument in favor of eliminating ComZ is ComZ itself, just as the principal point in favor of retaining ComZ is ComZ. The ComZ engenders the huge tonnages, the great headquarters, the construction, transportation, and supply problems which make ComZ necessary. ComZ is definitely a liability rather than an asset.

If manpower, money, and national resources were unlimited, there might be a reasonable basis for retaining some features of ComZ. With manpower in favor of the opposing forces there arises at least a doubt in the mind of a reasonable man. When we add the drain on our finances and on our dwindling national resources, the scales tip the other way, in favor of elimination of ComZ.

How to attain this objective, to eliminate ComZ, is not a problem for one man to attempt to solve in one paper or one book. It represents a series of projects, each presenting innumerable problems. Only a minor few have been sketched here.

The best we can propose at this stage of the game is to establish the starting place. The proponents of bigger and better ComZs, and they are not all empire builders, have had years of training and experience in this game and will not give up without a struggle. The team to fight this trend and to work out the mechanics of support direct to the army is not yet organized. What to do first?

Let us speed up supply to overseas armies to prepare for the day when this may be necessary.

Let us prepare for the army without the tail (ComZ) by analyzing each new product to determine whether it fits the new concept. Can it be maintained in army rear? Is it essential? Can it be eliminated without sacrificing over-all effectiveness? If not, can we substitute a smaller, lighter, more compact item?

Let us establish, now, one army in the field without a ComZ, with direct supply to army rear, and with all auxiliary activities drawing from army rear. This can work. We have never tried it. We need the experience. The reduction in expenditure will be amazing and the saving in over-all manpower will compensate fully for the added effort.

Since we mentioned prophets and prophecies earlier in this article, we shall close with one. Unless we take some positive measures to reverse the trend, we shall have a ComZ, a line of communications, a support command or some such institution on a vastly more elaborate scale for many years to come. Whether we are saddled with this liability in the next global conflict, if there is one, depends upon what we do now.

Best Damn Outfit in These Parts

Brigadier General Jeremiah P. Holland, *United States Army*
Provost Marshal, United States Army, Europe

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

I DO NOT know if growing old makes us become more cynical, more critical, or more observing. I do not know if age and experience make a person raise his standards beyond the reach of others, and beyond his own maximum efforts of younger years. But I do know that during the past decade there has grown within me an appreciation of an acceptable standard of conduct and how to attain that standard. The criterion may be high, but it is also necessary.

I am thinking, in part, of methodology. How does a soldier attain acceptable standards of conduct, appearance, care of equipment, and respect for command? How does an individual become determined to be the best enlisted man or best officer in the command? The achievement of the standard is symbolized by the development within each individual of an insatiable desire to make his unit the best possible and by active appreciation of the resultant glories and kudos.

In trying to describe this desire and this appreciation, we think of esprit de corps, a good title when earned, but a term that is too easily and hastily bandied about by the unthinking. Perhaps a more fitting and truly descriptive synonym would be *the best damn outfit in these parts.*

In this respect one likes to hear a man say:

Look at our commendations, watch us in a parade, check our conduct, examine the records—and take a look at our old man. He sees both the good and the bad in everything, takes no excuses, and plays no favorites. This is the best damn outfit in these parts.

Just what is demonstrated in a testimony like this? Certainly there is evidence of morale, loyalty, and good leadership—fine sounding words, something to strive for—but too many of these qualities are found only in the trite verbiage and stock sayings that clutter reports and burden speeches: "the morale is good," "loyalty works both ways," "leaders are born, not made," and thus it goes, ad infinitum.

The question is, how do we go from words to actuality? What can be done to attain that which we seek in our units—"the best damn outfit in these parts"?

Schools? Yes, but a questionable yes. Today we are beset with schools for both enlisted men and officers. The on-the-job training seems to have passed with the "old Army." In fact, we have become superconscious about our troop schools and we have even had to dress up a few and call them academies. There was a time

The achievement of acceptable standards is symbolized by the development within each individual of an insatiable desire to make his unit the best possible and by active appreciation of the resultant glories

when the word "academy" was traditionally married to the Hudson River or some other renowned location whose acres had been hallowed by the march of time. Now we have a plethora of fancy diplomas and a shortage of meaningful training.

Leadership? Emphatically yes! Without it we have but a shell of what should be. We must have leadership in officers and noncommissioned officers, but more basically we must have leadership of the individual, for unless a man leads himself he cannot lead others. This quality must exist from the day he arrives at the reception center until he stands his last review.

It appears that in speaking of leadership we too often make rank and leadership synonymous. We tend to think that the higher the rank, the greater the leader. In weighing the fundamentals of leadership we must divorce this rationalization from our thinking and take the individual as an individual, stripped of rank, age, and background.

Leadership is not taught; it is instilled. Leadership is pride: pride in one's self, pride in one's fellow men, and pride in perfection. How can you teach pride in a schoolroom? You cannot. It is impossible. But in or out of school, leadership or pride can be instilled. It cannot come from a curriculum; it can only come from a continuous effort.

How can leadership be instilled? First and foremost, you must be instilled with leadership yourself for there can be no complacent pointing to the trappings of leadership. You, personally, must be determined to make yourself the best soldier in the Army, and make your unit the best damn outfit in these parts.

Know your outfit and know its capabilities, whether you are a private or a commanding officer. Know the weaknesses of yourself and your outfit and do not be afraid to admit them. No unit is perfect, and if you know and appreciate your weaknesses, you know where to strengthen.

Know your men as you want them to know you. Even in this machine age the human element is here to stay. You cannot instill leadership into that vague "private over there in the supply section," unless you know his name, personality, character, desires, and capabilities. Some people call this psychology but I call it leadership.

Read the Book

Know what you are doing. *Read the book.* Call it *RTB* for short and keep that slogan in front of you. Publications have been distributed on everything we do or should do, no matter what the echelon or command. In fact, today we have too many books and publications, but too few readers.

One cannot stop perfecting himself once he receives a diploma, whether it comes from a replacement training center or from the highest service school in the Army. Read and keep on reading, absorb and keep on absorbing.

Be openminded. Be aggressive for new ideas from all sources. A closed mind speaks only from that which is already there. We live in a changing world and what are facts today may be history tomorrow. It is only through an open mind that a leader can adapt himself to his circumstances and surroundings.

Be observant. Make corrections. Accept nothing less than perfection. There is only one way to do a job in the Army and that is to do it right. It is the details that make

---

Brigadier General Jeremiah P. Holland was graduated from the United States Military Academy in 1927. During World War II he was Assistant Provost Marshal and subsequently Provost Marshal for the command which included Australia, New Guinea, and the Philippines. He has served as Provost Marshal for the Fifth Army, and was assigned to the Office of the Provost Marshal General in Washington. Following his graduation from the National War College in 1950 he became Commanding Officer, The Provost Marshal General Center, and Commandant, The Provost Marshal General School. Since February 1953 he has been Provost Marshal for the United States Army, Europe.

up the whole, and it is the privates who make a good unit.

Once you are secure in these ideas you are well on the road to helping others become leaders. Leaders are not born, they are made—made by others who give willingly of time and effort.

When should we instill leadership? Always! Constancy of effort is a part of the definition of a good leader. He gives unstintingly of his time and attention. He leads a dedicated life, determined to help others as others have helped him.

Observation cannot be confined to the drill ground or to the classroom. A leader's observations and efforts should be boundless. Too many are able to look and too few are able to see. Leadership requires a definitive knowledge of right and wrong. Each glance must register a definite conclusion. In our Army there is no grey area between right and wrong. There must be no halfway acceptance.

Correct or Compliment

Correct that which is wrong and compliment that which is right. To your *RTB* add *C or C—Correct or Compliment.*

Where should leadership be instilled? The answer, of course, is everywhere within your command, but that is not the starting point. The first step is to make certain that you are instilled with leadership, for surely that is within your command responsibility. Without that one cannot help others. Each individual in the Army has a command responsibility beginning with the newest enlisted man, but still, regardless of grade, the command responsibility rests first with one's self. After this, there is the inexorable chain of command. At all times corrections and compliments—*C and C*—must follow the chain of command. Failure to keep this policy is failure to instill leadership.

We cannot tell when the most recent graduates of our schools will be called upon to exercise leadership; and yet, how often do our instructors fail to even mention the basic qualities of self-understanding and of insight into others. Our students memorize the texts, earn their diplomas, and are led to believe that makes them leaders.

Conclusions

Three things need to be added to our classroom instruction: know yourself, know others, and remember that you are a student as long as you are in the Army. Schools are but a link in the chain to the perpetual instillation of leadership and that purpose is achieved only when the basic qualities of good leadership are given life in the actions of men.

Read yourself, read other people, read the book, look and see what is right and what is wrong, then correct or compliment. It is only through the dedicated leadership of individuals that a unit achieves the title, *the best damn outfit in these parts.*

Everyone recognizes that the priceless qualities of leadership are not possessed by everyone. In the best leaders, certain fundamental qualities such as competence, clear-thinking, self-discipline, impartiality, and decisiveness are apparent. These characteristics give a leader an ability to inspire confidence in his subordinates. It takes these qualities, plus training and experience, to develop good leadership. Should we fail to develop leadership, we are lost.

Assistant Secretary of the Army Hugh M. Milton, II

THE HUMAN BALANCE SHEET

Major General Kazimierz Glabisz
Former Commander of the 4th Polish Infantry Division

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

IN SPITE of the fantastic progress in the development of armament, the part played by man, as a fighter and commander, or in connection with production and transport, is still and always will be of the utmost importance in any type of warfare. Although it sounds like a paradox, this importance increases as weapons become ever more powerful in range and efficiency.

Sad indeed would be the lot of a country at war that could not rely upon the will of its soldiers and workers to fight or toil. However numerous and ingenious the machines may be, they alone would not be able to save such a country from defeat. Although there can be no doubt as to the free world's technical supremacy over the Communist bloc—qualitative in almost every field, quantitative mostly in potential only—one can feel dubious about the relative proportion of strength between the two sides in regard to the human element.

This article attempts to cast some light upon this extremely important problem; an attempt which, by its very nature, involves certain risks, although it is restricted only to the analysis of the fighting element—strictly speaking, the soldier.

The risks of such an attempt, at least with regard to the estimation of the qualitative side of the question, lie in the necessity for comparing and measuring factors which are imponderable in themselves and, therefore, must be estimated not only with the help of previous experiences and present observations, but also by the use of intuition which can so often be deceptive.

In discussing manpower reserves there are two aspects which must be considered—quantity and quality.

Quantitative Aspect

Communist propaganda tries persistently to persuade people, both at home and abroad, that the East already possesses, and will continue to possess, a far greater reservoir of manpower than the West because it now includes China with her great masses of population. On the other hand, according to this Communist propaganda, there is a reluctance on the part of the Western Powers to arm their own "suppressed" masses, as this would "involve serious danger to the antidemocratic regimes now in power." The first of those propaganda statements could, but need not, be true, although the West regards it almost as self-evident. The second is a blatant lie.

The Eastern bloc amounts to about 850 million people, that is one-third of the entire world population which is approximately 2.55 billion. Obviously it is an enormous human reservoir, far greater than that of the so-called "Axis" in 1940. Nevertheless, this reservoir, 75 percent non-Soviet, is actually only half of the free world's total human reservoir.

Unfortunately the entire free world, although more or less anti-Communist, does not directly belong to the Western bloc. A

number of states on this side of the Iron Curtain favor a policy of neutrality and wish to continue on those lines even in case of an armed conflict. The majority of these countries, whose populations add up to about 540 million people, would probably offer resistance and join the Western camp if their neutrality were violated by Communist troops. However, it is impossible to count in principle on their initial military cooperation.

Thus the anti-Communist camp proper, although not twice as strong as the Communist bloc, still totals about 1.16 billion people, which is 45 percent of the entire world population. This numerical superiority of the West, amounting to almost 300 million people, unfortunately would not be sufficient to permit the Western troops to outnumber those of the East in land warfare. On the contrary, there would be larger numbers of Communist divisions on the front, at least as long as the West would be unable to make maximum utilization of the native forces from Asia, Africa, and Latin America, and to a certain extent also from Western Europe.

The reasons for this paradoxical situation are well known. The most important are: a more complete development of the Western facilities for production, communication, and administration; a relatively far stronger buildup of Western air and naval forces; the much lower peacetime strength of the Western land forces coupled with the difficult problem of mobilizing the native forces; a higher percentage of personnel unfit for frontline service than in the East; and finally, the far more extensive logistical structure of the Western Armed Forces.

On the other hand, one should remember that in a future war the Eastern bloc would be unable to use as high a proportion of its human potential in the frontline as the Soviets did during World War II. This important difference, which the West does not sufficiently consider, stems from the following reasons:

In the Soviet Union there is the enormous development of her industry; more men are required in her Air Force and Navy; and more manpower is required to create a closely knit air defense net around her immense territory.

In the European satellite states there is the obvious necessity for keeping a strong police force and, at the same time, the Communists are afraid to arm too wide a strata of the population in view of local anti-Communist and anti-Soviet feelings.

In Communist Asia there is a lack of equipment.

Nevertheless, there can be no doubt that until the manpower reservoirs of free Asia, Africa, South America, and Western Europe are fully exploited by the West, the great numerical superiority of Communist land forces will continue.

It is obviously not necessary to refute the previously mentioned second Communist propaganda statement that the West would not dare to risk a mass mobilization of its population. It is sufficient to point out that, even in Italy and France where communism is still strong, the proportion of Communists is lower than that of anti-Communists in satellite countries, perhaps even lower than in the Soviet Union. As far as other Western countries are concerned, the mobilization of large masses does not involve any danger of revolution. Therefore, because the population of those countries has greatly increased, mobiliza-

Although the free world has technical supremacy over the Communist bloc, one can feel dubious about the relative proportion of strength between the two sides in regard to the human element—the soldier

tion could be even more extensive than in World War II when millions of people were called up.

Under such conditions, the Soviet superiority in numbers should not be so overwhelming that it could not be balanced to a great extent by Western technical superiority. The American supremacy in the field of tactical atomic weapons would either impede the application of Soviet "steamroller" tactics or inflict enormous losses upon Communist masses.

However, the Communist superiority in regard to the quantitative aspect of manpower reserves should not be dealt with lightly, since the qualitative side of the problem also has a partially threatening aspect.

Qualitative Aspect

An estimation of the relative values in this field is more difficult and less accurate than where quantity is concerned. This is true not only because the average quality of soldiers is defined by many factors which are difficult to discern, but also because we find a real jigsaw puzzle of nationalities and, therefore, a large and divergent scale of various natural characteristics on both sides of the Iron Curtain. While the level of training can be estimated with a certain accuracy, one can only guess at the future morale of the different fighting masses. This will depend upon the innate and inculcated qualities as well as the type of warfare employed. That is why it can be so misleading to form judgments based only on the observations of past wars.

The soldiers of almost every nation are apt to provide surprises by their attitude —either in plus or in minus quantities. The Prussian Army, incomparable under Frederick II, was later a complete failure in the 1806 campaign while in 1813 it fought again with great spirit. The French soldier, a model of tenacity during World War I, did not show the same will to fight in 1939-40, but he did regain his great reputation in the final phases of World War II. The Yugoslav soldier who gained such fame in World War I scarcely showed any real resistance in April 1941, but in the following years fought tenaciously as a partisan of Mihajlovic or Tito. Finland amazed the entire world by the heroic attitude of her soldiers in 1939-40. Such examples can be quoted without end. They prove how dangerous it is to base one's judgment solely upon tradition.

All this does not mean, of course, that it is useless to try and puzzle out the problem. On the contrary, it is absolutely necessary to unravel it at least approximately if one wants to have some idea as to the chances of each side in any future war.

Natural Characteristics

Although in every nation one can find heroes, reluctant heroes, and cowards, the history of wars proves that in normal conditions the proportion of these categories varies among different nations and is liable to fluctuations. Certain nations, warlike in the past, have become rather peaceloving and vice versa. In some countries the evolution goes on for centuries, while in others its course is swift under the influence of prosperity, excessive poverty, leadership, or propaganda. It is safer, therefore, to rely on fairly recent experiences and observations rather than on memories of a remote past. Approaching the subject in

---

Major General Kazimierz Glabisz began his military career in 1915. He commanded an independent brigade in the Polish-German Campaign in 1939, and in 1941 fled to Palestine and joined the Polish forces there. In 1942 he served in England as Chief of the General Department of the Polish Commander in Chief. He later commanded the 2d Polish Armored Division, and in 1945 assumed command of his country's 4th Infantry Division. Since the disbandment of the Free Polish Forces in 1947 he has devoted much of his time to writing on military subjects.

such a way as to avoid overgeneralization, one can describe the present situation by comparing the East and the West.

The West

The history of the twentieth century proves that the average man and soldier of the West is far from being aggressive, hates war, and would like to avoid it. After their total defeat in 1945 this statement could be even extended to Germany and Japan—at least for the time being. However, when the Western soldier is forced into war he usually fulfills his duty well and very often gives proof of outstanding bravery and tenacity. It was so in the past with the exception of some nationalities. It will be so in the future unless these traditional fighting instincts are paralyzed by disintegrating pacifist propaganda, inefficient leadership, or a hopeless disproportion of forces and chances.

As mentioned before, the average characteristics of soldiers from different nations vary. Providing there will be no upheavals to produce psychological changes in one or another of the great Western peoples, similar differences, as during World War II, will prevail in the future between the Anglo-Saxon, French, and Italian soldiers with respect to toughness, bravery, initiative, and determination. On the average they will share not only a rather high understanding of technical and mechanical intricacies, but also a marked sensitiveness to conditions of hunger and cold and especially lack of familiarity with nature and darkness.

The Turkish, Greek, Spanish, Canadian, Australian, or South African soldier will probably show a more or less different range of qualities as these countries are less industrialized. The most difficult characteristic to foresee is the future quality and attitude of the German and Japanese soldiers. Hitherto very brave, well disciplined, tough, and technical minded, they might be influenced by complexes and changes derived from their defeat.

Among the Asiatics it is not only the Japanese and the Gurkha who make good soldiers; natives of South Korea and Indochina displayed great qualities in this respect in the local wars in Asia. Military virtues were also demonstrated by the Israelite militia and the Jordan Legion. If properly approached and adequately armed, many African tribes might also prove real assets, although until now only the Berbers and Senegalese have had a chance to prove themselves in regular warfare. Probably the peoples of Latin America also will display excellent military qualities when properly utilized. Finally, there are the Free Poles, Czechs, Hungarians, and Balts.

There is in the free world a greatly varied reservoir of potential human resources, anti-Communist in its majority, possessing certain natural merits and deficiencies. When these merits are fully developed and the deficiencies reduced to an attainable minimum, the qualitative value of the Western human potential should, on an average, exceed that of the Communist potential.

The East

Before the natural virtues and weak points of the Soviet soldier are analyzed, the soldiers of the satellite countries should be examined. Among *the European satellites* undoubtedly the Poles, East Germans, and Bulgarians have the best reputations as soldiers: the Poles on the history of their gallant fights for independence in 1914-20 and their tenacious participation in World War II; the Bulgarians by reason of their brave and tough attitude in the Balkan campaigns and in World War I. But since the overwhelming majority of the Poles and East Germans hate the Soviets and communism, one can expect that in any future war the attitude of the Polish and East German soldiers would not

be active and sacrificing as long as they were forced to fight on the Communist side. Moreover, in case of appropriate development of operations and a clever Western policy and propaganda, mass desertion, sabotage, and perhaps even open revolt would occur in spite of Soviet control. The same principle applies to some of the other subjugated countries and their soldiers. Their military value is a controversial matter. The Romanians and Hungarians fought well during World War I, but rather weakly during World War II, perhaps because they were forced into the conflict by Hitler. The Czechoslovakians have not fought under their own colors in great masses for centuries. One thing, however, is certain: as yet, Moscow cannot have full confidence in the majority of satellite soldiers for their sympathy is still with the West. Unfortunately, there can be no doubt that as time goes on an increasing proportion of the young generation will be poisoned by the fumes of Communist propaganda and become reliable tools of the Soviet regime.

The situation is different with the *Asiatic satellite soldiers* who are neither acquainted with freedom nor with Western civilization. Chinese, North Korean, and Vietminh soldiers, while already fighting under Communist command, have shown many excellent qualities mixed with serious shortcomings. There is no need to enumerate them here as they are well known. These Asiatic satellite soldiers are even sturdier and more hardened to endure privations than their European counterparts, but on the other hand are an easier prey for their Communist bosses.

What are the natural qualities of the *Soviet soldier?* Communist propaganda describes him as incomparable. It portrays him as a model of fearlessness with a consciousness of his sacred task, and as a magnificently prepared and led fighter for the Communist faith. It would be absurd to overlook or underestimate the undeniable high qualities of the Soviet soldier, proved many times since the eighteenth century. It would be no less absurd, however, to exaggerate them or to overlook the weak points.

What type of soldier is he and what can be expected of him in the event of another war? In principle, a cross section of the mass of soldiers corresponds to that of the nation from which it is drawn. Soldiers are the very blood and flesh of all the people, not just the elite. This is especially true of the Soviet Union where men are called up to the ranks on a very large scale. As a matter of interest, in 1926, the year of the last census of nationalities, only 53 percent of the population of the Soviet Union were Great Russians, that means Russians proper, but during the last 30 years a shuffling and blending of nationalities has taken place so that, to some extent, a "Soviet" nation already exists.

The characteristics of the Russian soldier under the czars have been clearly revealed during the many wars with Poland, Sweden, Prussia, France, Turkey, Japan, and Germany. Some important changes have occurred under the influence of the Soviet regime, especially due to the sudden growth of towns and the emphasis placed on universal physical training. Nevertheless, the rural population still remains the most important source of manpower for the Soviet Armed Forces and the majority of the present city population was born and bred in the country.

The rural origin and background of the majority of Soviet soldiers has its advantages and its drawbacks. Among the good consequences are a greater familiarity with nature and darkness, a certain knowledge of primitive handicrafts, an easier submissiveness to authority, a habit of life in primitive conditions, a physical toughness and fitness, and finally an alleged capacity for easier healing of wounds. The shortcomings consist of lack

of responsibility and punctuality, carelessness in regard to events and happenings not of immediate concern, susceptibility to panic if taken by surprise, lack of initiative, and finally an insufficient technical imagination and understanding of intricate machines.

The background from which a soldier arrives has no influence on his courage. City born or country bred alike can be either heroes or cowards. The will to fight is not dependent on extraction, culture, or technical preparation. For this reason it is impossible to affirm categorically that the modern Soviet soldiers must be brave, even if the stubborn attitude of their ancestors, fathers, and brothers—in the battles of Kunersdorf, Friedland, Borodino, Stalingrad, Kursk, or Vitebsk—seems to corroborate such a statement. There have also been periods of time when the quality of their fighting spirit was indifferent, as during the Russo-Japanese War of 1905, World War I, the Polish-Russian Campaign of 1919-20, the war with Finland in 1939-40, and the beginning of the German-Soviet War in 1941. The Soviet soldiers did not show any outstanding fighting spirit until late in 1941. Only then did they respond wholeheartedly to Stalin's appeal to the patriotic and religious instincts of the Russian people, which before were rather suppressed. German cruelties and imperialistic tendencies were a big help to Stalin. Then, following the first German defections which were caused principally by Hitler's underestimation of the Russian winter, the Soviet soldier was freed from his inferiority complex and fought until the end with eagerness and determination.

The natural qualities of the Soviet soldier explain why in World War II he had shown special capabilities for stubborn defense, fighting at night, massive breakthroughs, overcoming difficulties of terrain and hardships of climate, and for street fighting and guerrilla warfare. On the other hand, these natural qualities explain why he could not compete with the German or Anglo-Saxon soldier in swift and complicated maneuvers and operation of sensitive machinery.

At present the great masses of the Soviet people do not wish for war, just as the Western masses do not want it. They are less afraid of its dangers, however, and probably have a superiority rather than an inferiority complex. Since the end of World War II, both the Soviet soldier and civilian have been and still are persuaded to hate the West and to believe blindly in the overwhelming strength of the Communist bloc. It would, therefore, be safer to conclude that courage and tenacity might again be among the characteristics found in the average Soviet soldier.

On the other hand, it would be unwise to overlook the fact that since 1945 a great deal has been done in the Soviet Union to industrialize the country and to promote the growth of cities. Accordingly, some of the other natural characteristics of the Soviet soldiers might, to some extent, become nearer to those of the Western soldiers than they were during World War II. Nonetheless, the differences are still very wide and will remain so, even if the present evolution of the Soviet Union continues.

Military Service Characteristics

Military service finally forms the soldier, develops or changes his natural characteristics, and trains him in some military specialty or specialties. Although on both sides of the Iron Curtain the ultimate aim of the military service is the same, namely to obtain efficient, well-disciplined, brave, enduring, and loyal soldiers, the methods of training, schooling, and supervising are very different and often diametrically opposed.

The Soviet and satellite soldier is schooled into a *hatred of the free world*

and into a blind admiration for the power and perfection of the Communist system and its armed might. In the free world the soldier is not fed on hatred or indoctrinated into such a biased outlook. This difference, however, is only one of many. Let us look at the most important ones.

Perhaps the most characteristic difference is in the *formula of the military oath of allegiance*, which is supposed to be the directing compass and a permanent source of inspiration to the soldier. In the free world countries this oath, linked with the name of God, invests the soldier with the dignity of a defender, but only of his own country and nation and not of any specific regime or alliance. Behind the Iron Curtain the military oath not only does not mention God, but tries to bind the soldier exclusively to the impostrous Communist Government and to the solidarity of the "democratic" countries, which means obedience to Moscow.

The differences in *approach to religious feelings* and practices are well known to all.

The *ideology* with which the Soviet and satellite soldier is indoctrinated demands from him a fanatical and aggressive attitude toward present and future tasks with the final aim of a Communist world. The Western ideology is defensive and uninspiring—it does not breed "Crusaders." Its main catchwords are defense of Western culture and civilization, keeping up an ever higher standard of living and peaceful coexistence with a bloc which could never be satisfied by such coexistence.

As far as *party politics* are concerned, the military authorities in the West, rightly and with great consistency, avoid any influence in this respect upon the soldiers. It is completely indifferent to what party, if any, the soldier belongs. He can be a Republican, a Democrat, a Conservatist, or a Socialist just as long as he fulfills his duties properly during military service. Party politics have no place in the Western armies; a few exceptions confirm this rule. The situation is quite opposite in the Soviet and satellite Armed Forces. There the Communist Party, the only existing political party, has open admittance and is given an all-important share in the education of all soldiers. It tries to form them spiritually and mentally, no matter whether they belong to the Party or its youth movement. Innumerable circles, committees, meetings, lectures, and catchwords, as well as spying networks, are used to mold the soldier into a convinced Communist and to deal with any opposition. This exaggerated amount of Party propaganda and spying, together with favoritism shown to active members of the Party, does not always bring the results desired by the political officers. In the satellite armies especially it very often produces grievances among the non-Party soldiers and strengthens their concealed obstinacy. This is most important, as in the Communist view morale is directly related to political loyalty so that political rather than ethical values are considered and rewarded.

The system of punishment and of supervision is also very different on both sides of the Iron Curtain. In the Soviet and satellite forces, the distribution of rewards and the application of penalties is quite different and spread over a much wider scale in spite of the fact that the Soviet military penal code of 1946 is nearer in spirit to that of the czars of 1869 than to the Bolshevik revolutionary code of 1918. Denunciations, if not completely void, are generously rewarded. Surveillance, rewards, and the unrestricted use of the threat of coercion are the means utilized to maintain obedience and loyalty. The spying system, organized in various secret channels, is highly developed and even the highest commanders are controlled. In the West, as we well know, there has never been any special network to spy upon the soldier. There is also no censorship of the

soldier's private correspondence with the exception of special cases or some periods of war. Listening to any radio stations or reading any types of books or papers is not prohibited. As a result, the Western soldier feels much more secure, satisfied, and self-confident.

Undoubtedly harder and more strict *military discipline and training* exists on the other side of the Iron Curtain as well as longer periods of service. The Soviet and satellite soldier is obligated to 2, 3, 4, or even 5 years of compulsory service and all phases of training are more intense. Daily duties including political indoctrination occupy approximately 15 hours, while in the West a duty day is usually only 8 to 10 hours. In addition, soldiers of the Communist bloc spend more time on maneuvers, field training, and night exercises under all types of climatic conditions. In addition, reserve units are called up more frequently for training.

These hardships probably produce a certain amount of discontent and weariness among soldiers of the Communist armies. On the other hand such methods are responsible for a relatively high level of training, certainly higher than in those Western countries where compulsory military service does not usually exceed 16 to 20 months. Even in specialized and mechanized fields, the level of training of the Soviet Armed Forces is higher than before World War II, although perhaps lower than in the West, and is increasing every year. This progress in specialization can be explained by an increasing proportion of recruits already having prior technical and military preparation, the growing efficiency of the professional cadres, longer and more extensive periods of training, and improved equipment.

In the free world the nonprofessional soldier is generally treated with more leniency. But as his training is shorter and on an average less intense, his service does not kill his initiative nor turn him into a "robot." He is better paid, fed, clothed, and billeted. He is allowed free contact with the civilian population, and has more free time and longer periods of leave. In the Western countries, and especially in the United States, the concern for the well-being of the soldier is perhaps carried a little too far. From his very nature less tough than the more primitive Eastern *paysan*-soldier, the Western soldier is often not hardened enough by the service to balance this shortcoming. Although this deficiency can be alleviated to some extent by better equipment, it may cause some unpleasant surprises, especially at the beginning of a possible war. On the other hand the Western soldier generally should be neither overtired nor bored and disheartened as is so often the lot of Soviet and satellite soldiers.

Therefore, the Western methods, especially after introducing some restrictions or intensifications, should produce results as good as those observed in former wars. This is true only in case the high standard of peacetime living is not carried onto the battlefield, where "fighting only from motorcars" or "marching on a full belly" would be most dangerous.

Conclusions

Although Western methods of training and education have produced good results, one has to admit that Soviet methods as well have passed a difficult test during World War II. Even remembering the part played by fortunate circumstances, such as Hitler's shortsightedness or vanity and the help from Anglo-Saxon powers, it would be risky to believe that these methods might prove to be double edged in a future war. We must bear in mind that the Soviet soldier does not know the real conditions of Army life in the West and that he is better fed and clothed than his brothers in civilian life. It is better, therefore, to assume that the Communist methods in general rather increase the natural assets and reduce the natural deficiencies

of the Communist recruits, at least in the Soviet Union and China.

The fact that, for the time being, the same methods fail with regard to the European satellite soldiers is of small confort, as the West is not conducting a real fight to win or maintain their allegiance and sometimes provides assets for anti-Western propaganda. Therefore, taking everything into account, one must rate highly also the qualitative aspect of the Eastern bloc's human potential, at least in the field of land warfare. Both the Russians and Chinese have been compared to the legendary Antheus, who kept his strength as long as he had contact with ground. In any case, the Soviets' aptness for air and sea warfare is still less developed than for fighting on land.

On the other hand, one can also assume that, as has happened in the past, the Soviet soldier would fight less successfully abroad than in defense of his "holy Mother Russia." In addition he would be deprived of the help of Russia's climate and vastness. Finally, behind the Iron Curtain many millions of people—the subjugated European nations and in Soviet Russia a part of the national minorities and slave-laborers—live in bitter hatred of their oppressors and long for liberation. All those factors impose limitations and therefore diminish, to some extent, the undeniable value of the Communist human potential.

In the final account, it appears that the above analysis and comparison of the mutual human resources neither empowers to optimism nor compels to pessimism. It does not result in favor of one side or the other—in any case not in all respects.

For the time, there is a preponderance of the accessible human potential of the East, but it is not as manifold and overwhelming as is usually assumed. It could be more than equalized by the superior material facilities of the West, especially during the second phase of a new global war.

Nonetheless, it would be better if the relation of the human potentials could also swing in favor of the West. This is attainable providing the West can, during the next years, widen and cement the anti-Communist camp, remove or at least attenuate some weak points in the exploitation and preparation of its human resources, lower the value of the Communist human potential by means of a suitable and consistent policy and propaganda, adopt a bold strategy should war come, and weaken and paralyze the dangerous Communist fifth columns.

The margin of safety of the free world would thus be wider and the nuclear deterrent would be strengthened by the human factor.

Today, with so many advances being made in the mechanical tools of war, there is a tendency on the part of some to overemphasize the importance of machines and to underestimate the importance of man. But the true value and importance of these tools to defend our freedoms depend finally upon the skill, the courage, and the conviction of the men who use them. Men will always be more important than machines, and on the battlefield men will always determine the issue.

General J. Lawton Collins, Retired

TIME TO THINK

Lieutenant Colonel William O. Quirey, *Artillery*
Division Artillery, 11th Airborne Division

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

EVERYONE seems to agree that the nature of warfare is changing. The advent of nuclear weapons in 1945 cast the first shadow of the coming nature of war. The launching of the *Nautilus* in 1954 and its first trial run under nuclear power in January 1955 foreshadow future changes of perhaps even greater magnitude.

As the nature of warfare changes, new doctrine, new concepts, and new techniques must be developed. The development of new concepts, doctrine, or techniques in any field requires independent, objective thought and analysis. In most fields of endeavor there seems to be general agreement that *experts in that field who are carefully chosen and given sufficient time are best qualified to create new and effective ideas.*

The military services are made up of numbers of temporary personnel and a core of professional military personnel. The professional military man is found in both the officer and enlisted grades. Certainly the officer grades have no monopoly on imagination and inventiveness. By the time the professional soldier, be he officer or enlisted, has completed 10 to 15 years of service, the military service has expended about 6 to 8 years and a vast amount of money to train and educate him. This training and education may include attendance at a military academy where the entire 4 years of education at Government expense is aimed at the creation of a graduate trained in the liberal arts as well as the rudiments of warfare. Or it may be started with 4 years in a Reserve Officers' Training Corps (ROTC) unit where the student, at a relatively minor expense to the Government, receives a shortened course in the military arts and sciences over and above his normal academic course. Each of these sources provides military manpower initially qualified in a normal academic environment at college level as well as in the art and science of warfare. Additional training in history, economics, political science, the sciences, and many other fields is provided for selected individuals at higher educational levels to include advanced degrees.

Military Education

On the military side, the officer entering the service will, by the time he reaches 10 years of service, have completed 2 years of training in a basic branch school. About 50 percent will, by the time they complete 13 years of service, have attended the Command and General Staff College. In addition, many will be graduates of technical courses in management, radio, radar, nuclear physics, motor ve-

Our Army has personnel with the ability, education, and imagination to provide the fresh, up-to-date study, analysis, and thought we need. What we need is to furnish these researchers with "time to think"

hicles, and many other fields. In addition to the education and training outlined above, a selective process goes on throughout the career of an individual in the military services. He enters a military academy or an advanced ROTC course only after an intensive selection process is administered. This process of selection is designed to weed out the unfit, either physically, mentally, or morally. Throughout his service after being commissioned, the officer is subjected to the same intensive selection for promotion, for further schooling, and for duties with greater responsibilities. The entire system is geared to ensure that only the best qualified rise to the top.

The enlisted grades find training and educational opportunities similar to those outlined above but to a lesser extent. Among enlisted personnel of all the services can be found individuals who possess remarkable ability but who, for some reason or another, have been denied the opportunity for the academic education considered desirable for the commissioned grades.

What do we do with all this training, education, imagination, experience, and ability? It is buried under a hodgepodge of paperwork and routine administration.

Under the system employed in the Army —and I am sure this must be true of the other services—an individual must be continuously producing paperwork, or he is not considered to be busy. Manpower surveys are a necessary part of a bureaucratic organization. They ensure efficiency in the employment of available personnel. However, when a survey team becomes so encircled with regulations that each minute of each day must be accounted for in the production of paperwork, then the system is dictating to its originator. Or, stated another way, "The tail is wagging the dog."

In the past few years, the Army has reduced the manpower allocation in some of its essential agencies while increasing their mission and responsibilities. This has resulted in the necessity for everyone to work at top speed both during duty hours and in many instances overtime to accomplish the primary mission of the activity. No time has been left for original thought.

Necessity for Thought

Today, the Army is confronted with the problem of warfare on a battlefield where atomic weapons may be used by both sides. Most of us believe that the basic principles of war will remain unchanged; however, everyone agrees that the techniques of applying these principles will change.

Take, for example, the principle of *mass*. The atomic weapon creates mass in a way never before available to the commander on the battlefield. Is this weapon equal to a division? Is it equal to two divisions? Is it a maneuver element? Is it a fire support element? These and many other questions must be thought out before the answer is finally found. The ultimate test for the answer is war—when it may be too late. The answer arrived at must be the product of the best minds available. Those minds are probably found in our Army school system and in staff positions at higher levels of command.

Those individuals in staff positions at higher levels are necessarily engrossed in their day-to-day activities. If time is available, they should be given an opportunity to "just think" or to "study." This

---

Lieutenant Colonel William O. Quirey attended the University of Kentucky and is also a graduate of the Basic and Advanced Courses of The Infantry School. His service during World War II included assignments with the 5th Infantry Division and installations of the Replacement and School Command. He was graduated from the Command and General Staff College in 1952, and became a member of the faculty of the College. Since June 1955 he has been assigned to the 11th Airborne Division.

should not be on their own time. If extra time is available during duty hours, rather than create unnecessary work, the individuals so engaged should be made to feel free to work on individual research projects. This cannot be done if the constant fear of reduction of his staff hangs over the commander.

Even more than the staff officer, however, there is a potential in all the Army schools for individual thought. Here there are excellent libraries available. There are specialists in every field of endeavor in the Army. There is the academic atmosphere which contributes to the urge for "finding the answers."

True, much of an instructor's time is spent on research in preparation for instruction. In this field, however, he is always working against a deadline and must stay within accepted doctrine. It is outside our presently accepted doctrine that many of the answers to warfare of the future may lie. Independent research must, therefore, take the instructor outside the scope of field manuals and into the world of theory—into that never-never-land of hypothesis. When he emerges, he may have an answer which could never be found as long as he remained within the currently accepted doctrine.

The individuals who are today cited as the great authorities on warfare apparently found time to analyze their own experiences and the experiences of others. In addition, they found time to set their conclusions down on paper so that we in the modern world can go back to Clausewitz, Napoleon, and others for the lessons of tomorrow. Somewhere within the theory of warfare lies the answer to conduct on the battlefields of today. It is those answers which we of the free world must find. Even more important, we must also find the means of applying those answers in sufficient time to design and build the material necessary for their successful application. The world cannot live for today alone. It is constantly preparing for tomorrow. The Army must keep abreast of the changes.

Our society today lives in a constant rush. It demands the pyramiding of tempo until little time is left for looking into the future. Yet, in the future lies the salvation of the free world. Our first and greatest hope is that the statesmen will find the way to a lessening of tensions and prevention of war. If war comes, the military forces should be ready.

However, what do we find? The necessity for original thought, analysis, and development of new concepts has continued. With few personnel in the Army having time to spend on such projects, it then has become necessary to contract with *civilian educational institutions*, *civilian research organizations*, and just plain *civilian corporations* to do the thinking for us. As a result, there was born Operations Research Office, Human Resources Research Office, Project Michigan, Project California, Project Brainwave, and others. To properly acquaint civilian experts in the military fields, a great deal of time of professional military personnel is used. Even after such briefings, it is doubtful that many will be as well-grounded in the military sciences as are professional military personnel with several years of service. Undoubtedly, these scientists are contributing a great deal to the military doctrine and techniques of the future. I have no quarrel with what they are producing. In fact, we probably would be lost without it. The real question is "Why are they successful?" Civilian institutions have long recognized the value of independent and original thought and experiment. It is through such processes that most of our recent scientific advances have been made. For this reason, all great educational institutions have many individuals occupying space and drawing pay who, for many months, may not produce any tangible results. Then, one day, an an-

assigned to the 11th Airborne Division.

tunity to "just think" or to "study." This

nouncement is made of a new vaccine which is expected to prolong the life span of man.

It is difficult to visualize Albert Einstein developing his theory of relativity while cranking out routine pieces of paper on "Why 2 plus 2 equals 4," or of Salk developing his vaccine while daily giving routine shots for yellow fever or typhoid to hundreds of patients.

Yet, this is the position in which the Army finds itself. At Army schools the regular faculty was so busy they had little or no time for independent thought and study. So, combat developments sections were formed throughout the Army school system. Most of the officers assigned to those sections were outstanding in their chosen field. Their start in the field of study of new tactics, new doctrine, and new concepts was auspicious. Separated from the daily routine of instruction, and preparation for instruction, yet in an academic atmosphere, with adequate experience to draw from, they were ideally situated to think out and develop new doctrine for future war. Within a period of less than a year, they have become so burdened with routine administration and new tasks *not* designed to provide time for original thought that they have become part of the plodding herd.

The Army has the brains, it has the personnel with the ability, it has personnel with the education, and it has personnel with the imagination to provide new, fresh and up-to-date study, analysis, and thought.

The only thing these individuals need to help our Army remain a strong and current army is *time to think.*

In an emergency, funding for research and development will be no problem; however, the necessary facilities and scientific and engineering talent will be in great demand and in short supply. There will be no time for sober, well-considered evaluation of new ideas; production engineering suffers, and the end result is wasteful use of our skills and critical raw materials.

In seeking a solution for an urgent problem, it might be necessary, due to lack of time, to embark on several developments, building several expensive experimental models of different concept or design, and finally go into production on a poorly engineered model which would appear to offer the best chance of success.

The lesson is obvious—let us do our research and development in peacetime insofar as possible and have weapons "on the shelf" ready to go when needed.

Rear Admiral P. D. Stroop

application. The world cannot live for to- any tangible results. Then, one day, an an-

COMMUNIST SUBVERSION OF THE ROMANIAN ARMY

Benson Lee Grayson

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

THE Communist seizure of power in Eastern Europe has been one of the most important developments resulting from World War II. In each of the East European countries the Communists regarded the national army as a powerful opponent in the struggle for power, and devoted much attention to destroying its capabilities for independent action. The purpose of this article is to consider the process which enabled the Romanian Communist Party to first neutralize the Army to prevent armed resistance to the Communist takeover, and then to reorganize the Romanian Army into a Communist apparatus ready to participate in any military operations of the Soviet Union.

When Germany invaded the Soviet Union in June 1941, Marshal Antonescu committed Romanian troops to participation in the campaign. During the 3 years of fighting in the Soviet Union, Romanian units comprised the second largest contingent in Hitler's army, and suffered casualties of 100,000 killed and 180,000 captured.

When it became apparent that Germany was losing the war in August 1944, Romania sought to join the winning side. King Michael and representatives of the prewar political parties organized a *coup d'état* which ousted the government of Marshal Antonescu, and Romania concluded an armistice with the Allies on 25 August 1944. The armistice agreement provided that Romania was to commit 185,000 troops to the war against Germany. Actually, Romanian troops totaling 385,000 fought on the side of the Allies, and the Romanian Army was the fourth largest force fighting the Germans (after the Soviet, American, and British Armies).

During this period the Communists did not attempt to infiltrate the Romanian units fighting the Germans, since it was not practical to risk the loss of trusted agents as war casualties. Moreover, this was not necessary as the anti-Communist Romanian troops were willing to cooperate with the Soviet Army in defeating Hitler. Within Romania, however, the Soviet forces arrested Romanian troops protecting the country, and sent them to the Soviet Union for indoctrination. There they were placed in prison camps which also housed the Romanians captured during the German invasion of the Soviet Union.

After considerable privation the captives were asked to volunteer for the new Romanian Army being organized in the

In each of the East European countries the Communists regarded the national army as a powerful opponent in the struggle for power and devoted attention to destroying its capability for independent action

Soviet Union. Those who did were promised better food, good quarters, and rapid promotion. The prisoners who accepted this offer were formed into two Romanian divisions, the Tudor Vladimirescu and the Horia, Closca, and Crisan Divisions (named after Romanian heroes). Following their organization, these two divisions were returned to Eastern Europe where they fought under the direct supervision of the Soviet Army for the duration of the war.

The *Coup d'état*

While the Soviets were training the nucleus of the new Romanian Communist Army in the Soviet Union, the Romanian Communists were working to subvert the Romanian Army High Command. In January 1945 the Soviet Government issued instructions for the overthrow of the non-Communist Romanian Government and the establishment of a satellite regime. As part of the preparations for the *coup d'état*, the Romanian Communists persuaded 11 prominent Army officers to support the revolt in return for the promise of important positions in the Communist Government. Among these officers were General Rascanu, commanding an army corps, General Pretorian, and Major Popescu-Argetoia.

The Communist seizure of power in Romania began on 24 February 1945. Large mobs rioted in the capital. An unsuccessful assassination attempt was made against the Prime Minister, General Radescu, and he openly accused the Communists of working to overthrow the Government. At this crucial moment the 11 pro-Communist Army officers released a manifesto which denounced the Radescu Government and called for support of the Communists. This move destroyed King Michael's faith in the loyalty of the Romanian Army, and he felt compelled to submit to a Soviet ultimatum and agree to the formation of a Communist-controlled government.

Following the Communist seizure of power the 11 Army officers were rewarded for their betrayal of Romanian independence. General Rascanu was appointed Minister of War, General Pretorian became Army Chief of Staff, and Major Popescu-Argetoia was placed at the head of the Secret Police. It is characteristic of Communist tactics that they were perfectly willing to employ these officers, two of whom had been ardent Nazis, in order to effectively neutralize the Romanian Army during the Communist seizure of power.

Policy Changes

With the surrender of Germany in May 1945 the Communist policy toward the Romanian Army changed. It was no longer necessary to provide a large supply of manpower to assist the Soviet Army; rather, a small loyal cadre was required which would be the foundation of the new Romanian Communist Army. As troops of the Regular Army returned from the war against Germany, they were rapidly disarmed and demobilized. The Tudor Vladimirescu and the Horia, Closca, and Crisan Divisions, however, were retained intact.

The Romanian Government promulgated a law which incorporated all *anti-Fascist fighters* into the ranks of the Regular Army, thus permitting old Communist Party members to obtain important posts. One of those who profited from this law was the notorious Ana Pauker who became a major general. In addition it was ordered that *any meritorious soldier may become a high officer in the Army.* This ruling was interpreted to mean that promotions were to be made on the basis of

---

Benson Lee Grayson holds a Reserve commission in Military Intelligence. He received a Master of Arts degree in Soviet Area Studies from New York University in 1953. He attended the Russian Institute of Columbia University, specializing in Soviet military organization, and has completed the course requirements for his Ph.D. This article is one chapter of his Doctor's dissertation on "Soviet Integration of the Satellite Armies."

merit rather than rank, and Communist privates soon were made senior officers.

One feature of this stage in the reorganization of the Romanian Army was the absence of important Communists in the Army High Command. Communist puppets such as Generals Rascanu and Pretorian were permitted to occupy the nominal positions of authority, while the actual Communist military commanders remained in the background. The conclusion of this period was reached in the fall of 1947, when the strength of the Romanian Army reached a postwar low. The soldiers who remained in service, however, were regarded as completely loyal to the Communist Government, and were to be used as the nucleus for the new Romanian Army.

The Romanian Communists ended the facade of coalition government on 7 November 1947, with the expulsion of Foreign Minister Tartarescu from the cabinet. This step was regarded by the Communists as the end of the transition period between capitalism and socialism, and was followed by the full imposition of the Communist dictatorship. Similarly in the military field the Communists' puppets were ousted from the Army High Command, and Communist leaders assumed the formal positions of authority.

The new Minister of War of the Romanian People's Republic, General Emil Bodnaras, was appointed on 24 December 1947. He was of Ukrainian descent, possessed Soviet citizenship, and had once deserted from the Romanian Army. General Bodnaras had spent the war in Moscow, and was in the confidence of the leaders of the Soviet Union. Despite the numerous purges which have taken place in the Romanian Government since 1947, General Bodnaras continues to retain his post.

One of the first actions of Bodnaras was to increase the size of the Romanian Army. The period of military service was lengthened from 18 months to 2 years, and military service was made compulsory for all citizens. Although the Romanian peace treaty had stipulated that the maximum strength of the Army was to be 120,000 men, the Army was reported to total over 350,000 in 1951.

As Minister of War, General Bodnaras purged the officials who had previously purged the Romanian Army of anti-Communists, including the 11 officers who had supported the Communists during the seizure of power. They were tried and convicted on pretexts which had nothing to do with communism; General Pretorian, for example, was sentenced to 12 years' imprisonment for having accepted bribes and for damaging public property.

The expansion of the Romanian Army and the purge of the remaining unreliable officers were calculated to prepare a military establishment which could be trusted to assist the Soviet Army in external conquest, or to defend the Romanian Government from internal unrest. The increase in the size of the Army necessitated measures to ensure the loyalty of the new recruits. This was accomplished in two ways.

The Romanian Communist Government has attempted to ensure that the living standards of the Army will be substantially higher than that of the civilian population. All Army personnel are entitled to 3,500 calories of food daily, and are assured of clean living quarters. Officers and noncommissioned officers, whose loyalty is of even more importance to the regime, are provided with free clothing and equipment. Finally the Government maintains free resorts near the sea or in the mountains for cadres and their families to spend vacations. According to a Communist propaganda pamphlet: *instead of the rags donned by the soldiers of the former Royal Army,* the soldiers of the Romanian Communist Army are equipped with *modern arms which combine soberness and beauty.*

If the Romanian soldiers are not won over by their material benefits, the Government expects them to be convinced by the constant political indoctrination which takes place in the Army. The Communists openly admit that *due to the strained work performed by the Army's political apparatus, one may justly assert that the Army has today become a true school of the Romanian people.* The political commissars, who are present in every major unit, conduct the soldiers' offduty activities (singing, dancing, and athletics), so that the individual has no private time to think, and thus lapse into political heresy.

Soviet Influence

Today the Romanian Army is being transformed into an appendage of the Soviet Army. Romanian military schools are headed by Soviet officers, and several hundred Romanian officers are completing advanced training in the Soviet Union. Romanian staff officers are required to learn the Russian language so that they can converse with the Soviet advisors assigned to their unit. The Romanian Army is being instructed in Soviet tactics, organized along Soviet lines, and equipped with old Soviet weapons. Even the Romanian Army uniform has been copied from the Soviet model.

On 2 October 1954 the Romanian Army celebrated the annual Armed Forces Day. In his order of the day, General Bodnaras stressed that the best units of the Army were those formed in the Soviet Union during the war. He concluded his order in a manner which indicates the present condition of the Romanian Army: *Long live the eternal alliance and friendship with the great USSR! Long live the Romanian Workers' (Communist) Party!*

Conclusion

The Romanian Communists have devoted much time and energy to transforming the Army into an effective tool of the regime. Following the end of the war the old Romanian Army was demobilized except for those who agreed to work with the Communists. A new Army was organized around cadres drawn from units trained in the Soviet Union and it is constantly being improved by the addition of new Soviet weapons and techniques. This force is now well above the maximum size provided for in the peace treaty. Although it is impossible to estimate the combat efficiency of the new Romanian Army, it is nevertheless vital that we do not ignore its capabilities. Such a course of action would be exceedingly dangerous for the continued well being of the United States and her allies.

Free nations must maintain countervailing military power to persuade the Communists of the futility of seeking to advance their ends through aggression. If Communist rulers understand that America's response to aggression will be swift and decisive . . . they will be powerfully deterred from launching a military venture engulfing their own peoples and many others in disaster. Now this, of course, is a form of world stalemate. But in this stalemate each of us . . . may and must exercise his high duty to strive in every honorable way for enduring peace.

President Dwight D. Eisenhower

THE HELICOPTER IN EARLY LINK-UP OPERATIONS

Lieutenant Colonel Stuart M. Seaton, *Artillery*
Faculty, Command and General Staff College

This article is in consonance with current instruction at the Command and General Staff College.—The Editor.

ALTHOUGH having appeared on the horizon only recently, military strategists and planners have predicted a brilliant future for the helicopter. With mobility playing such an important part in war plans of the future, it is imperative that commanders realize the importance of the employment of helicopterborne forces and develop techniques of tactical planning and training for the use of these forces. The day when the helicopter was treated as a toy has passed and the device is now a full-fledged weapon waiting to be used.

As helicopters are being produced in larger quantities, now is the time for commanders to start planning for the utilization of this new mode of travel so that units will be ready when helicopters are made available in quantity for operational use. The value of helicopterborne forces has been pointed out in Field Manual 100-5, *Field Service Regulations, Operations,* September 1954 which states in part:

Air movement is a means of transportation used to rapidly launch units into battle, or deliver troops, supplies, or equipment, or any combination thereof, to a secured objective area, or an area inaccessible to other means of transport. . . . Currently, the two types of aircraft which may be employed for air movement of troops, supplies, and equipment are fixed-wing and rotary-wing.

The utilization of helicopters as a means to transport units into battle is doctrine. As doctrine, it means that commanders should begin to train their units to utilize this mode of transportation just as they train them to use vehicles or fixed-wing aircraft. This training must extend to the individual soldier in our tactical units so that he has knowledge of loading helicopters and of the conduct of operations after disembarking in enemy territory. Staffs must be trained to prepare loading plans which maintain tactical integrity of the helicopterborne force, to select suitable landing sites and flight routes, to plan for marshalling, and to resolve the many other facets of tactical planning.

Now is the time to go through this training stage. We must not wait until the helicopters descend upon us in quantity before we learn to use them. Our next conflict may strike us so suddenly that

In conformance with existing doctrine, we must be prepared to employ helicopter transportation in operations. Only detailed planning will ensure that the capabilities of this new vehicle are best utilized

we will have little time to train before being committed to action.

There are many aspects of readying units for employment by helicopter. Let us narrow the field of interest and turn our attention to only one aspect: that of the division G3 and his problems and considerations in planning an early link-up operation when helicopter transportation is available.

The type missions, concept of employment, and tactical planning for operations using helicopters must be considered in the light of the favorable and limiting characteristics of the vehicle.

Favorable Characteristics

Flexibility and mobility headline the list of favorable characteristics. The helicopter is capable of taking off and landing with little horizontal movement on the ground, or it can hover without landing. This decreases the problem of landing site selection and indicates that they may be used to pick up or deliver troops in areas inaccessible to surface transportation. The helicopter can attain a speed of approximately 100 miles an hour, and has the capability of ranging its speed down to zero. This capability, together with characteristics of vertical ascent and descent and freedom of horizontal movement, makes the vehicle well suited for operation in difficult terrain and for overcoming terrain barriers.

Range of operations of the helicopter, together with its speed, allows units to attack deeper objectives more rapidly than if they used normal ground transportation.

Limiting Characteristics

Vulnerability to enemy action is the helicopter's greatest limitation. It is vulnerable to enemy air while on the ground and en route to and from the objective area. For this reason, control of the air is mandatory to successfully execute an operation involving the employment of a large helicopterborne force. The fact that the unarmed helicopter is also vulnerable to artillery, mortar, and small-arms fire must be considered throughout planning to ensure that proper measures are taken to reduce this vulnerability to the maximum.

Deception is difficult to achieve when using helicopter transportation. The necessity for assembling to load the transported force, the inherent noise of the vehicle, and the flight into enemy territory make such operations difficult to conceal from the enemy.

Limited visibility will have an adverse effect on an operation using helicopter transportation. Although not affected to the same extent as fixed-wing aircraft, the result of periods of limited visibility should be considered as a limiting feature. Operations during such periods require deliberate preparation, experienced pilots, and pathfinders, and if visibility is less than 1 mile, speed must be reduced to permit the pilot to detect and avoid obstacles. This in turn slows down the entire operation; in some instances, it may make the use of helicopters inadvisable.

Load limitations also pose a problem. The tonnage that can be transported will vary with altitude, temperature, humidity, range of operation, fuel load, and load limits. Units must plan to transport only the minimum essential items of equipment necessary for the accomplishment of the mission.

Lieutenant Colonel Stuart M. Seaton served with the 82d and 101st Airborne Divisions in the Mediterranean and in Europe during World War II. In 1949 he attended The Artillery School where he also served as an instructor. He was commander of the 674th Airborne Field Artillery Battalion, 187th Airborne Regimental Combat Team, in Korea and Japan from 1952 to 1953. Following his graduation from the Regular Course of the Command and General Staff College in 1954, he became a member of the faculty at the College.

Technical limitations exist and should be included. One of major concern is the maintenance problem. Helicopter units have a deadline factor of about one-third for continuous operations and a considerable portion of maintenance must be accomplished by skilled personnel with specialized equipment. Helicopters require more fuel than ground transportation and the fuel must be of a higher octane rating.

Type Tactical Missions

The G3 must keep in mind that the helicopter is a means of transportation when determining the type tactical missions on which this vehicle may be used. He might well plan to use helicopter units in a river crossing, an amphibious assault, or when faced with crossing swamps, mountains, lakes, or other unfavorable terrain. Other than overcoming obstacles or for special operations, consideration should be given to operations involving pursuit and exploitation, rapid shifting or committing of reserves, counterattack, exploitation of the effects of atomic weapons, defensive or retrograde operations, and for the extrication or reinforcement of cutoff forces. These missions are generally applicable to larger units. The helicopter can also be considered as a means of transportation for small-scale operations such as patrols, reconnaissance, counterreconnaissance, raids, and security forces. One salient feature, however, is that regardless of the type mission or scale, the basic planning factors and planning procedures are similar.

Request and Control

Assume that the G3 has received approval from the commander for the employment of a portion of the division by helicopter. He then must obtain the necessary helicopter support. Although in the future there may be a limited number of cargo type helicopters available within the division, the G3 will have to request support from higher headquarters for large-scale operations. Current organization indicates that four helicopter transportation battalions, each consisting of a headquarters and headquarters detachment and three helicopter companies (21 helicopters each), will be assigned to the type field army. These battalions may be retained under army control or they may be suballocated by being attached for operational control, or by being assigned a support mission. The G3 requests helicopter support through the normal command channel.

When requested by division, corps may suballocate its attached battalion, or portion thereof, by attachment to division for operational control if the mission warrants. If additional support is indicated, corps can forward the request to army. When a helicopter unit has been attached to the division for operational control, the division has the authority to place it under the operational control or in support of one of its regiments. When placed under the operational control of a regiment to maintain flexibility and to ensure employment in accordance with the technical capabilities of the helicopters, division must supervise to ensure that the helicopters are being used properly. There may be missions or movements which will necessitate authorization of operational control at battalion or even company level. In most instances when operating with units below regimental level, assigning the helicopter unit a supporting mission should be sufficient. However, in view of maintaining maximum flexibility, control should be decentralized only to the extent essential to accomplish the mission. Division should ensure that the degree of control authorized is clearly stated in the operation order.

Once a request from division has been approved, the helicopter unit will establish liaison to assist in planning and furnishing any necessary technical assistance.

The liaison officer from the helicopter unit (probably the battalion S3) is valuable to the G3 in formulating plans for the operation, and he should be consulted in all phases of planning which involve the helicopter unit.

Planning

General staff responsibility for the tactical planning of an operation involving the employment of helicopters, as for other operations, rests with the G3. Planning procedures do not change with the inclusion of helicopter transportation; however, some additional features must be taken into consideration in planning.

The technique of planning such an operation is very similar to planning an airborne operation. Both must evolve through the backward planning sequence. As in all tactical planning, the mission is the starting point, and all plans must support the accomplishment of the mission. Without a clear and unmistakable understanding of the mission, the plans may be ill conceived and success jeopardized.

Objectives

To accomplish the mission, the objectives must be properly selected. First, an objective must have the same characteristics as for any other offensive operation:

Its capture must be possible within the time and space limits imposed.

Its capture should either ensure the destruction of the enemy in his position, or the threat of its capture should compel the enemy to evacuate his position.

It must be easily identified.

Its capture should facilitate future contemplated operations.

Objectives assigned subordinate elements of the attacking force must produce maximum unity of effort.

If helicopters are to be used in the operation, there is one additional consideration: Are there sufficient landing sites on or in the vicinity of the objective and can they be neutralized? One might logically say that the location of the landing sites does not dictate the selection of objectives, but that the landing sites should be selected to facilitate the seizure of objectives. Generally this is true. If the nature of the terrain precludes unloading troops and equipment on or sufficiently close to an objective to achieve surprise, this terrain feature should not be selected as an objective for a helicopterborne force. This certainly would be the exception since the helicopter does not actually have to land to discharge personnel, but it should be considered. An outstanding example of discharging troops without landing occurred in November 1952 when United States Marines executed a tactical exchange of a battalion on the main line of resistance (MLR) in Korea. In this operation the helicopters hovered just above tree level and the men descended on ropes to the position. The troops being relieved climbed back up the ropes into the helicopters and were flown to an assembly area in the rear.

In considering whether the landing sites can be effectively neutralized, the concern is from the standpoint of neutralizing them to permit the vulnerable helicopters to land on, or in the vicinity of, the objectives. If they cannot be neutralized, the objective should not be assigned to a helicopterborne force.

In view of the relationship between the selection of objectives on the ability to neutralize landing sites, and on the location of available landing sites, the landing plan assumes great importance. The landing plan indicates the sequence, the time, and the place of arrival of troops and matériel in the objective area. This plan must be integrated with and designed to facilitate the scheme of maneuver.

In determining the sequence of landing, the G3 must first decide which tasks have the highest priority and in what sequence they should be accomplished. Based on

this, priorities for moving troops and equipment to accomplish the mission and for movement of reserves can be decided. The establishment of these priorities cannot be separated from the tactical scheme of maneuver.

The landing plan indicates the exact date and hour of landing units in the objective area. How is this determined? The time of landing of each unit will be based on the scheme of maneuver. The factors governing the selection of the time of landing are generally similar to those affecting other ground operations. However, the time of assault cannot be disassociated from other pertinent factors such as weather. Good aerological conditions must exist in order to launch a multihelicopter flight rapidly, control it during flight, and land it accurately in the objective area. Full cognizance must be taken of this fact when planning, and alternate plans must be made to permit the necessary flexibility.

Another factor affecting time of attack is the desirability of attacking during periods of limited visibility—night, rain, snow, fog, low ceiling, or smoke. Bright moonlight is preferred for night helicopter operations. In comparing day versus night operation, thought must be given to such things as the pilot experience, the degree of control of the air, vulnerability to enemy ground fire, and the technical problems involved with night operations. Daylight operations are comparatively simple to execute and generally speaking should be favored. Although not related to airborne operations in their entirety, many aspects of helicopter operations are similar and experience has indicated the desirability of daylight airborne operations. Various degrees of compromise, however, do warrant consideration by the G3 when confronted with this problem. These include a daylight takeoff followed by a dusk landing; a night takeoff followed by a dawn landing; and conducting a daylight operation using screening smoke. Compromise may be necessary for reasons of secrecy, but the daylight assault remains preferable. Examining other conditions of limiting visibility, the basic principal remains the same—it is a matter of weighing urgency and secrecy against simplicity, mass, and speed.

In conformity with the concept of the over-all operation, the assault of the helicopterborne force must be launched at a time which will ensure success until link-up. How long can the helicopterborne force hold its objective area? This can be answered only by an analysis of the mission and detailed study of the terrain, the enemy situation and capabilities, and the capabilities of our own forces. The same factors must be considered in determining the rate of progress of the link-up elements. Thus, the date and time of attack of both the link-up elements and the helicopterborne force must be interrelated.

The actual area in which the helicopters land and take off is known as a landing site. Two or more such sites within the same general location comprise a landing zone. Helicopterborne forces have limited ground transportation and after delivery have restricted battlefield mobility. Consequently, landing zones should be on the objective, if possible, or in the immediate vicinity thereof. If landing zones are so far distant from the objective that the element of surprise is lost, this in itself is a major deterrent to the rapid accomplishment of the mission. If the landing zone is coincident with the objective, it must either be free of enemy forces or enemy forces in the area must be neutralized by rendering personnel or matériel incapable of effectively interfering with the accomplishment of the mission. If the personnel and/or matériel on an objective can be neutralized, we have overcome one of the outstanding limitations of the helicopter, its vulnerability to ground fire, and the landing zone and the objective could be coincident. This aspect points to the neces-

sity for timely and accurate information as failure to possess proper intelligence of defenses in the vicinity of landing zones and objectives could prove disastrous. The landing zones should be as close to the attack position as possible in those cases where landing on the objective is infeasible. This will facilitate speed of the operation and consequently increase the chance for achieving surprise.

The capability of landing a helicopter-borne force on a certain landing zone certainly does not end with the ability to neutralize it as there are other factors of major significance. They should be reasonably free from enemy artillery and mortar fire; this normally cannot be accomplished by selection only and other measures such as screening observation, air strikes, and suppressive and counter-battery fires must be considered. The size and configuration of the landing zone is also important; it must be of sufficient size to handle the size unit that is scheduled to land in that specific location—this is directly allied with the tactical scheme of maneuver of the unit. In many cases obstructions will limit the size or dictate the configuration of the landing zone; when it is restricted, the landing rate may be affected, and there will be a greater interval between successive serials. This in turn will have a major effect on the surprise obtained and initial mass achieved in the objective area and must be weighed in light of what is needed in the way of initial mass and surprise to ensure success.

In determining the size and configuration of the landing zones and the landing sites, technical features of the helicopter must also be considered. Here is one of the many phases of planning in which the G3 may call for assistance from the liaison officer of the helicopter unit or the Army aviation special staff officer. Planners, for example, must determine whether or not each landing site has sufficient concealment, both from the standpoint of the approaches and for the site proper. The approaches and exits to the site should be as large or larger than the diameter of the site itself, aligned into the prevailing wind, and free from obstructions. The actual touchdown areas should be free from stumps, holes, and other obstructions.

Considering all of these factors, the G3 must have as his end product a landing plan which will place the proper units and matériel at the proper place and time to reasonably ensure successful execution of the planned scheme of maneuver.

Flight Routes

The next planning step is the determination of helicopter flight routes to and from the selected landing zones. Here again the G3 is materially assisted in his planning by the helicopter unit liaison officer or the Army aviation special staff officer. The inherent flexibility of the helicopter permits it to approach the objectives over routes which will offer maximum cover and concealment. These routes can take advantage of defilade and by variation of altitudes obtain the concealment afforded by cloud cover. However, it would be preferable to have short direct flight routes to the objective area to increase speed and surprise.

In addition to taking maximum advantage of terrain, several other factors are also important. Enemy defenses should be avoided; particularly important are the location of the enemy antiaircraft defenses. Selected flight routes should avoid known enemy organized ground defenses and enemy artillery and mortar fire to the maximum extent practicable. The avoidance of enemy fire in most cases will be a combined effort of selection of the routes and suppressive fire support. Flight routes should also be located to minimize interference with ground actions and friendly fire support.

The helicopter is vulnerable to detection by enemy radar and consequently

flight routes should be selected with this thought in mind. Since radar detectors operate on line of site, the use of low altitude flight routes and defilade may greatly minimize the likelihood of detection.

As previously mentioned, the final approach into the landing sites should be into the prevailing wind when determining the flight routes leading into the objective area.

The use of multiple flight routes will permit a better concentration of mass in the objective area, with a better possibility of tactical surprise and a reduction of in-flight vulnerability. On the other hand, the use of multiple routes will complicate flight and fire support planning.

Loading

We have now progressed to the loading phase. Prior to this phase units would make final preparations and brief personnel. Units should have basic loading plans for the use of helicopters down to and including the squad level. Who and what equipment goes into each helicopter must also be determined. For tactical operations these plans should be based on maintaining tactical integrity of units to the maximum extent. It is just as important to have these plans prepared and on hand as it is to know the plan for vehicular loading. With these basic plans it is only a matter of tailoring them to fit the particular scheme of maneuver designed to accomplish the assigned mission.

The G3 prepares plans for the allocation of the helicopters to subordinate units in conformance with the tactical plan and effects the necessary coordination to ensure that the loading and takeoff is efficiently executed. When the operation is of battalion or larger size, the G3 should prepare an air movement table similar to that used in airborne planning. This should indicate the serial numbers, the number of helicopters allocated for the lift of each unit, times and sites, the time troops should be loaded and ready for takeoff, takeoff time, and the destination (landing zone). This then provides the subordinate unit with the necessary information with which to plan and execute the air movement.

There are two possibilities in determining the loading area: one, move the helicopters to the divisional units; and two, move the units to be transported to the helicopters.

There are certainly advantages to both systems and one could not state that either system would be better under varying situations and circumstances. There are, however, definite features to be considered when deciding which system to use. In the "pickup" system, the outstanding advantage is the speed that could be gained by quickly loading and moving the unit to the objective area. To bring the helicopters to the unit eliminates the necessity of making a march back to the helicopter unit. The helicopter unit would most likely be located in the corps or army area and there would be a consequent delay due to movement. This would be of importance if the unit were assigned an urgent mission. Another advantage is that there should be a possibility of achieving surprise; moving the troop unit increases the possibility of pointing to the operation. If the unit to be transported were in army or corps reserve, the possibility of surprise would be greater than if the unit were from a frontline division. The major disadvantage to this system is vulnerability to enemy fire. If possible, loading units should be out of range of enemy artillery and not under enemy observation. There is the disadvantage of not having the loading facilities available that would be present at the helicopter unit. Maintenance is another limiting feature of the helicopter. Neither maintenance nor briefing facilities would be as convenient if loading were accomplished in an area other than at a helicopter unit.

Both systems are feasible. In effecting a pickup of an element of a frontline division, it is visualized that the loading area would be in the general vicinity of the division reserve location, would be dispersed, and in defilade. Loading areas should be reconnoitered and the actual location determined prior to the arrival of the helicopter unit. The necessary briefing facilities should be available at regiment, and its subordinate units should reconnoiter their loading sites. This should become as much a responsibility and as commonplace as determining the location of the truck parks if the regiment becomes motorized. Assembly areas should be selected in the vicinity of the loading sites so the unit can execute the loading operation in an expeditious manner. The speed of loading would in turn reduce the vulnerability of the force to enemy fire by presenting a target for only a minimum time.

With regard to the secrecy of the operation, one measure could be to have training exercises; should the enemy detect the loading activity, he might consider it as a routine training mission. Another measure could be to have the helicopters move to the loading sites at the last possible moment under the cover of barrages to help screen the noise. They could be brought in at night if the pilots had used the sites during daylight on a previous mission, if they were sufficiently free from obstacles, and if the location were such that lights could be used to assist in landing.

Fire Support

We have now completed the final major phase of backward planning, that of loading. With this completed, the unit is ready to execute its mission.

Fire support planning must be given serious and careful consideration in planning any operation; however, in operations employing helicopterborne forces there are additional problems that must be closely analyzed.

There is the possibility that objectives would be out of range of artillery with the link-up forces.

There is a limited amount of artillery with the helicopterborne force. (In view of the present load limitations of the helicopter, the 105-mm howitzer would be the largest artillery weapon transportable.)

The vulnerability of the helicopter requires close planning to neutralize the landing sites and to suppress enemy fire while in flight.

There must be close coordination to ensure that there is no conflict between planned fire support and the location of flight routes, altitude, and time and duration of flights into the objective area.

Fire support should be considered in two distinct phases—fire support prior to and after the assault.

Prior to the assault, surprise is the overriding consideration. If there is a possibility of a surprise attack on an undefended area, the attack may be launched without a preparation. However, it is felt that this would be the exception rather than the rule.

There should be no intelligence error when we attempt a surprise attack; unlocated, or improperly located, occupied enemy defensive areas in the vicinity of the objectives or landing sites could well jeopardize the accomplishment of the mission. In view of this, it is felt that the surprise attack, other than for patrols or small unit raid action, is infeasible and that an intensive preparation of the objective area utilizing all means available would be essential for most operations.

Protection of the air column must be provided as helicopter flights are quite vulnerable, both to enemy air and ground fires. It appears obvious that control of the air is essential and air cover should be available both for protection of the flight and for maintenance of control of

the air. Suppressive fires on known enemy positions which are capable of bringing fire to bear on flight routes and landing sites must be included as part of the preparation, and must be continued after the preparation. These fires should be directed particularly against enemy antiaircraft artillery positions within range of the selected flight routes and supporting air can be utilized on this fire suppression effort. Passive as well as active means of protection are necessary. All units in the vicinity of the flight routes must be informed as to the location of these routes, the time and duration of flights, altitude of the flight columns, and the identification measures to be in force. All fire support plans must be fully coordinated with the flight routes to ensure safety. This is a must in planning such an operation to avoid bringing friendly fire to bear on a flight.

After the assault begins, fire support procedures are normal. If the operation is to be conducted beyond the range of friendly artillery, the close air support effort must be increased. Close support aircraft should be on air alert for the helicopterborne force until link-up with the surface elements has been accomplished and normal medium and heavy artillery support is available. Even if the helicopterborne force is within range of friendly artillery, it would still be desirable to have air alert aircraft available to the force during the initial assault phase. In both of these situations the air effort would be requested as preplanned missions. As in airborne operations, vulnerability during landing and reorganization is a major consideration. During this period fire support must be closely coordinated. Although within range of supporting artillery there may be a short period of time until communication can be established, and scheduled fires should be planned to cover this gap.

As previously discussed, all efforts should be made to prevent enemy artillery fire from being brought to bear on the flight routes and landing sites. This points to the importance of an efficient counterbattery program. Since the helicopterborne force will not have long-range artillery, detailed fire support plans should be made with provisions for maximum utilization of supporting artillery and the air effort to overcome this deficiency. If the objective area is beyond the range of supporting artillery of the link-up forces, the supporting air effort becomes even more important.

Fire support coordination centers would function as in other operations and no variation in procedure would be warranted.

Training

What can be done today to train for operations involving helicopterborne forces? The logical place to begin is to indoctrinate the division, regiment, and battalion staffs on the possibility of employing helicopter transportation tactically and on the capabilities and limitations of the craft. When they thoroughly understand this, begin training in staff planning for hypothetical operations.

Concurrently, units should be conducting officer and noncommissioned officer schools to prepare key personnel for training their own units. Following this, units should conduct indoctrination at company and battery level to let the individual soldier know about the capabilities and limitations of the vehicle with which he will be working. Next, begin training with mockups of the light, medium, and heavy helicopters so the troops can load and unload rapidly and prepare equipment for action. The unit should then be ready to begin training in assembly of units and equipment.

One of the advantages of using helicopters is that units can be assembled rapidly in the objective area. They arrive by platoon or company flights, and these units can be delivered to the landing site

in a short period of time. By so doing the assembly problem is greatly simplified but not eliminated. Training in assembly should begin at platoon level and work up by moving the troops to the proposed landing sites by simulated helicopter loads and in the proper flight order. Have them assemble by platoon, company, and battalion prepared to move to seize their objective. After proficiency is gained in these aspects, put the training to test in the field, first on command post exercise basis, and then on field exercise basis. This would be followed by the final step of all field training—conducting appropriate tests and maneuvers.

When the unit has completed the foregoing tasks, they should be in position to finalize an SOP which should be invaluable for future training or actual operations. Any division, regiment, or battalion SOP which fails to include a portion devoted to the unit operating as a helicopterborne force has omitted consideration of one of its important operational phases.

With the increased need for mobility in modern warfare, it appears that the use of the helicopter for tactical operations can help supply the answer. The helicopter is no longer a toy and should not be treated as one. It offers a wide variety of uses to the tactical commander, and in planning and training for future operations this mode of transportation should not be overlooked.

Because of the peculiarities inherent to helicopter operations, it behooves troop commanders to start planning and training for the use of this vehicle now. Troops must be made familiar with helicopter operations. Commands should develop SOPs which will enable troops to operate efficiently when helicopters are available in quantity. So that planning will not lag behind the development of helicopters, every opportunity to use helicopterborne forces in maneuvers or exercises should be utilized. It is only in this manner that our forces will be prepared to make maximum use of this mode of transportation when they become available in quantity. If mobility is truly the watchword of future operations, this new vehicle may provide the solution.

One of the more striking improvements in the Army's mobility is the expansion of Army aviation. The light aircraft which made its debut as an artillery spotter in World War II has taken on a host of new missions, making possible more effective command supervision, closer liaison, and more rapid reconnaissance. I have often reflected how important to our military success in Korea were the Army airplanes and helicopters which adjusted the fire of our weapons, moved our reserves of men and equipment, and allowed commanders to follow closely the course of the battle. It was 125 miles from my headquarters in Seoul to the right flank of Eighth Army line, but I could get there and stand on a mountaintop in the outpost line in less than an hour. We are interested in the flying platform. We are working toward helicopters and convertiplanes of greatly increased cargo capacity to enable us to transport significant numbers of men and quantities of equipment and supplies across nearly any kind of terrain in the combat zone.

General Maxwell D. Taylor

TRANSLATORS AND INTERPRETERS IN THE ARMED FORCES

Major Jack A. Dabbs, *United States Army Reserve*

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

IT WAS no joke when Churchill remarked after the Casablanca Conference that the greatest aid to the Allies was the fact that both the British and the Americans spoke a common language. Certainly the problems of cooperation between nations is difficult enough even when difference of language does not intervene to make this more conflicting through inefficient communication.

One of the most baffling facts of international travel, understanding, and good will is that from land to land men speak languages not mutually comprehensible. In the conduct of military operations which often involve American troops in other countries, this obstacle creates ill will, anger, and slow performance rarely provided for in logistical tables and computations. Nevertheless, until recently, the United States Army has not been conscious of the language problem, and it is now only slowly feeling its way.

In 1941, at Fort Benning, while attending a lecture of scouting, patrolling, and reconnaissance by a Regular Army instructor, the author was very surprised at the offhand and matter-of-fact way in which he mentioned "local inhabitants" as an important source of information about enemy actions, location, and strength. After the lecture I approached the instructor and asked him how he proposed to obtain such information if the locale were outside the English-speaking world. He waved the question aside and answered lightly that it would be easy—that in practically any regiment of the Army there were men who could "handle" that problem for any part of the world in which American troops were likely to operate. As the earliest months of mobilization proceeded, this lackadaisical and unrealistic attitude seemed the rule in the new divisions and regiments being formed.

Evidently this was not the case in Washington, however, for as the war horizons broadened in that tragic year, stirrings began to appear in official memoranda, indicating that close watch was to be kept on personnel records for specializations of various kinds.

Early in 1942 this pace quickened. High directives, clearly inspired by the War Department, began to arrive in division headquarters asking for surveys of specialists, and language ability was included.

Trained selected military personnel, supplemented by reserves whose civilian occupations furnish them with linguistic training, can provide the reliable interpreters needed to fulfill our military commitments

That such search was not always accomplished by men trained in language problems is shown by one extreme example: A directive from the headquarters of at least one division early in 1942 asked for a survey of personnel with knowledge of a listed group of languages, and it included such terms as Belgian, Bohemian, Czechoslovakian, and Yugoslavian. Such lists were prepared and forwarded, but as a rule little if any use was made of them.

One of the difficulties lay in the fact that information necessarily had to come from an AGO Form 20, prepared during a man's initial interview but unsubstantiated. The Army had no such source of information for commissioned personnel until March 1942, when the Officers' Classification Card, Form 66-1, was filled out by all officers and made available.

Special Language Schools

The spring of 1942 also saw the beginning of special language schools—one in Minnesota for Japanese language, and short refresher schools in various other areas. The II Army Corps in Camp Blanding, Florida, held a School for Prisoner of War Interrogation, of 6 weeks' duration. It was followed by a similar school conducted jointly by the 1st Division and 36th Division. Eligibility for the course was based on an oral interview of enlisted men whose Form 20 reflected some previous knowledge of German. The course consisted of refresher study of the German language, reading and translation of texts in military German, lectures on German history and psychology, and, finally, practice in interrogation—including the introducing of students into the local stockade of German internees with whom they were to speak. Veterans of World War I who had experience in interrogation of prisoners were invited to tell some of the lessons which they had learned.

This type of work, directed at enlisted men, was unrealistic because it became obvious that officers would have to do most of the interrogating.

The first extended effort of this type was the Military Intelligence Training Camp at Camp Ritchie, Maryland. A circular from the War Department requested officers who had a knowledge of German to apply directly for assignment to the school. This action was necessary in case higher headquarters might hold up application papers of a good officer who sought assignment. When the first class was assembled at Camp Ritchie, an oral examination qualified each member, and an 8-week course combined reading of difficult texts with general training in combat intelligence and German Army organization. Later courses offered more specialized training.

At the same time, the Navy, which had been even less interested in languages than the Army, began an intense system of schooling, particularly in Japanese. With groups studying in such schools as the University of Colorado and the University of Oklahoma, they proposed an 18-month course that would turn out qualified interpreters and interrogators. Some of these graduates did, in fact, render worthy service in the later stages of the war.

Early in 1944 the Army set up Japanese language courses in several universities but confined the term to 6 months and combined it with area studies. Such courses for German were not necessary

---

Major Jack A. Dabbs entered active military service with the 141st Infantry in 1940. He attended the first class at the Military Intelligence Training Center in 1942. In 1943-44 he served as Russian Liaison Officer and worked with native labor in the Persian Gulf Command. He was with the Research Section, Office of Public Information, United States Military Government in Korea in 1945-46. He was assigned as Administrative Officer, 7771st Document Center, Berlin, from 1946 to 1948 and is presently Associate Professor of Modern Languages, Agricultural and Mechanical College of Texas, College Station, Texas.

because a large number of officers and enlisted men were found who, as had been expected, knew enough German for field work. In the case of languages other than French, Spanish, or German, there was a scramble in which some unqualified individuals were boosted on the unproved claim to a knowledge of Burmese, Persian, Malay, Tibetan, Turkish, or Hindustani.

How did the supply of interpreters and translators work out in practice? A good example is that of the Persian Gulf Command. When the United States Government contracted to open a lend-lease supply route through Iran, the first moves were made by civilian concerns.

These civilian concerns solved the language problem by using local interpreters. When the first elements of the United States Army arrived and set up headquarters in Teheran, there were two officers who knew the language well enough to conduct business but no enlisted men conversant with the language. One of the officers was a medical officer; the other worked in the Intelligence Section. Both performed invaluable service to the Army. For other contacts the Army relied on Iranians who spoke English, on the American Embassy which had a rather good staff, and on British representatives who had prepared the way so that a minimum of contact was required. Later on our troops obtained a sufficient number of interpreters for Russian, but contacts with Iranians below the diplomatic level continued on a makeshift basis which reflected Americans in a poor light.

Inherent Disadvantages

Inherent potential disadvantages lie in the uncontrolled use of interpreters, and military personnel should be aware of them. A cardinal principle is that a knowledge of a language alone is not enough.

Interpreters selected from the Armed Forces on the basis of their recorded knowledge of a language are apt to be first or second generation immigrants who presumably have a native knowledge of the language. First generation immigrants frequently will be expatriates or refugees with prejudices and with axes to grind. Transplanted to their native land, they tend to show the same characteristics as indigenous interpreter personnel. This does not mean to belittle the many individuals who did render conscientious and efficient service. With adequate training after they have become thoroughly Americanized, they can furnish topnotch service.

Second generation speakers generally have no personal contact with the people whose language they speak because they are necessarily American. Their knowledge is inclined to be superficial, inaccurate, and confined to homely subjects—the so-called *Grossmutter Deutsch*—and for social reasons they sometimes pretend to know less than they really do or, as frequently, overestimate their knowledge. As interpreters without further training, they are undependable and tend to be unqualified. They have the advantage, however, of possessing a feeling for the language and the basic sentence patterns. With college training in their language, and military training for special work, they can develop into excellent interpreters.

The next category is the interpreter who is found on the spot and utilized there. The English language is widespread enough that in almost any part of the world the first American troops to arrive are met with open arms by a scattered group of natives who speak varying amounts of English but who do know the local language and situation intimately. It is extremely easy to make use of these natives, but equally dangerous. These native speakers tend to have inadequate preparation in English, but American officials meet this inadequacy with extreme tolerance. The local interpreters are taken immediately into the ranks of senior officers, given a deference beyond their due, and

because they seem irreplaceable, their untrained ideas and interpretations—unless well screened—can receive military significance which may very well be baseless. Because the interpreter is the only link with the populace, he soon acquires an undeserved eminence among his people. Important officials come to him with requests which he may or may not transmit or may present incorrectly.

Clearance

Besides personal integrity and linguistic qualifications, interpreters and translators must in some way be cleared as security risks if our Armed Forces use them. This investigation is usually difficult, and in many ways similar to asking them to check on themselves.

Military personnel handling interpreters and translators must watch over these individuals with paternal care. In hostile territory they may require protection from physical harm, for, by aligning themselves with our troops, they alienate themselves from their countrymen.

One officer who worked with a Chinese translator group in the China-Burma-India Theater reported that his translators had a tendency to translate what they thought the Americans wanted to hear rather than what their text said. This danger is constant for there are many parts of the world where politeness conflicts with accuracy—a social concept difficult for Americans to understand.

A constant control on the personal habits of the staff must be observed rather than allowing local mores to rule. In Seoul in 1945-46 translators of one staff were upset and nervously unable to perform their duties because the major in charge of their office refused to intercede to help them obtain dwelling places for their families. Under the patriarchial Confucian philosophy of the Chinese-Korean-Japanese area, an employer automatically assumes responsibility for the care of the families of the employees and intercedes with authorities to help obtain suitable living quarters for them. When the major breached this custom, he left the employee alone and on his own in trying to deal with authorities who expected a higher official to intercede. The result was that the translators obtained very poor living quarters and blamed the Americans for abandoning them to their fate. Although American custom frowns upon intervening in such a case, the problem continually arises and must be met.

In this same office in Seoul, in the early days of military government, considerable absenteeism prevailed with new employees. Finally the hour for beginning work was moved from 0800 to 0830 to make it possible for all to get to work on time. Tardiness continued, however, particularly in the case of the head of the group who rarely arrived before 0900. When pressed for a reason, he explained in embarrassment that it would look improper for him to report earlier than his subordinates. Therefore, when they came to work at 0800, he had to wait until 0830; when they changed to 0830, he had to change to 0900 in order to avoid losing face. While the problem may seem trivial to an American, he must not overlook its importance to the local native. There is no standard solution to these problems. Each will have to find its own solution.

From the foregoing it appears that our military forces must rely as little as possible on local talent in overseas areas and must develop their own linguists to perform the necessary language work.

An effort has been made at the Presidio of Monterey to develop language experts by a relatively long period of intensified training. At first only enlisted men were enrolled. However, it was since determined that the responsibilities of interpreting and translating are of officer caliber, and generally officers must either be accustomed to do the work or to supervise

it. Officer courses are now an integral part of the program.

For ordinary interrogations and routine translating, a person with aptitude may be released from intensive study in about 1 year. Once on the job—assuming a desire to improve and profit from experience—he can make rapid progress. Such individuals are most useful because being members of the Armed Forces they may be assigned other duties when not engaged in language work. As a part of our Armed Forces and integrated into its operations, they know the terminology and values to be attached to the material with which they deal better than civilians.

Personal Requirements

The feasibility of giving language training to a wide range of personnel offers some hope. Language study requires infinite patience, long hours of study, and some of the naïveté of the child. At the same time it requires a degree of assertiveness; that is, the student must not be afraid to make mistakes yet he must be ready to accept correction. It also requires a great deal of necessary work and, therefore, a habit of remembering. A senior officer in class with juniors all too often finds himself outstripped by juniors because of other duties and responsibilities. When attempting to use the language with the first halting and fumbling phrases, dignity is apt to suffer, and discouragement is easy. However, there is no basis to the belief that older individuals learn less readily than younger men—provided they can spend the same amount of time in study and practice.

What has been said so far refers principally to general translating and interpreting—interrogation of prisoners, ordinary contacts with civilians, as in handling native employees, and routine paperwork. In high-level work—conferences and exchanges of views, as in negotiations between military leaders, political negotiations, press conferences, and official social functions—expert interpreters are necessary, for the turn of a phrase or the vague wording of a statement may cause serious misunderstandings. For such work we need men of education and wide experience in both languages involved. They usually, but not necessarily, have bilingual backgrounds and have extended periods of residence in areas of both languages. An outstanding example is that of the Underwood family, some members of which acted as the official interpreters for the United States Military Government in Korea, 1945-50, and Korean truce talks, 1953-54. Raised in Korea in a missionary family where they used both languages since childhood, they returned to the United States for college and then spent more time in Korea working with the people in their own language. They knew both American and Korean history, sociology, and politics. Such men are prime examples of the highly qualified interpreter. Simllar kudos are due the Walsh brothers of a missionary family in Iran who had like qualifications and rendered remarkable service as members of the United States Army.

The University of Moscow has a training school for interpreters which produces well-trained, efficient, and competent translators and interpreters. Other leading nations also have special training for such people, and in our dealings with their representatives we are too frequently forced to rely on interpreters furnished by the other party. Not only is this tendency fraught with opportunities for inaccuracies to our disadvantage, but it gives the other party a feeling of superiority and the self-assumed right to look down his nose at the monolingual Americans.

In the United Nations, which has, perhaps, the largest collection of operating interpreters, we can find good examples, and from their work some generalization may be drawn. The one-language person

is inclined to think of interpreting as being like a sausage grinder wherein one inserts a big potato and out comes the same potato in a new form. This is far from the case. No language permits word for word translations. Usually entire sentences have to be recast and extra but neutral elements added in order to make sense according to the patterns of the second language. Language patterns are always amazingly complex, and small discrepancies often make a great deal of difference.

Effective Preparation

It is impossible, therefore, for an interpreter to sit like the sausage grinder and take in any manner of subject matter and mechanically emit it in the new tongue. Rather, the efficient interpreter inquires ahead of time what subject will be discussed and who will probably speak. He prepares for the conference beforehand by reading on the subject to be discussed and noting the special vocabulary used. Where possible, he obtains transcripts of other conferences on the same subject to inform himself on the history of the subject, and he studies transcripts of previous speeches by the individuals who will talk, in order to accustom himself to the personal style of that individual.

When he is called on to interpret, he has an idea of what will be said; he has become, if not an expert, at least well informed on the subject. When he begins his work he listens to what is said for the first complete thought and turns that concept, long or short, into the pattern of the other language. If he miscalculates and does not get the entire concept in one utterance, he will often have to retract and correct himself. If the speaker does not leave him time to translate at frequent intervals, he will have to make notes or depend upon memory. Very often an enthusiastic speaker will ignore the interpreter and run away from him. The interpreter will then have to interrupt the speaker or else become lost. How easily he becomes lost depends on his skill. In the most important sessions today, a recording is often made of speeches, and reference is later made to the recording for correction and checking.

Dangers to Avoid

The greatest danger in the use of the interpreter is the fact that he is apt to be beyond correction. If one single interpreter is used during a court-martial, for example, there will rarely be anyone present who can correct mistranslations or spot chicanery.

A general principle is that the translation should express the same point of view to the hearer as it would to the hearer in the original language. When you hear an answer that does not accomplish this, suspect the interpreter and insist that he repeat the words of the witness in the same person and tense.

If a native interpreter is used, be sure that he knows English well enough to interpret. He often thinks that he is telling you the idea but may have selected the wrong English words. Also be certain that the social status of the interpreter is such that he will not conceal facts disadvantageous to the persons addressed for fear of retaliation. Conversely, also beware lest his temporary position of importance permits him to browbeat the person examined and elicit information contrary to fact. When possible, try to isolate the interpreter so that he will have no chance to make a personal arrangement by which it is to his advantage to misinterpret what is said. Finally, when possible, have another interpreter listen for mistakes. This checking can also be done by a person who does not have a sufficient knowledge of the language to do the interpreting, but who knows enough to check on the interpreter occasionally. This is the payoff for the so-called "smattering" of a

language. In most languages the basis for a "smattering" can be developed in a few weeks of intensive study or a few months of more leisurely work, and every officer in our Armed Forces who expects to serve overseas should be so prepared. Every graduate of West Point or Annapolis has some such background, and it should be a "must" for every Reserve Officers' Training Corps graduate because, in general, our American colleges offer the best milieu for such training.

Conclusion

In the past our best source of interpreters has been members of religious groups with long experience abroad, but, at the same time, consisting of educated individuals who have been able to profit intelligently from their residence and contacts. The best single source has been missionary personnel. Such men have educations which make it possible to learn a language properly. Experience in its use as an everyday language, combined with social work, gives body to the ideas and connections raised by the words. Their children who often are bilingual and tend to be well educated in both societies are equally capable. With the growing national spirit that has resulted from the movements of the last two decades, and with the exclusion of foreign missions in many areas, this source of reliable interpreters is dwindling. At present they must be replaced by refugees as a temporary measure. The only lasting solution to the problem, however, lies in the training of selected military personnel supplemented by standby reserve personnel whose civilian occupations provide them with the linguistic training.

THE MISSION OF THE MILITARY REVIEW

The MILITARY REVIEW has the mission of disseminating modern military thought and current Army doctrine concerning command and staff procedures of the division and higher echelons and to provide a forum for articles which stimulate military thinking. Authors, civilian and military alike, are encouraged to submit materials which will assist in the fulfillment of this mission.

Competition for Military Writers

Remuneration for all published articles submitted by military writers (active-duty personnel of the uniformed services of the United States Armed Forces and students of Allied countries while attending the Command and General Staff College) in the magazine is on a competitive basis.

Monthly Award—All articles written by military authors published in each issue are reviewed by a board of officers representing the Command and General Staff College. The board selects the first and second best articles published each month. The authors of the selected articles receive $100 and $50, respectively.

Annual Award—When 12 monthly awards have been made, the 12 first place articles are reviewed by the Faculty Board and the Annual Award article selected. The author of the Annual Award article receives $350.

The selection of both monthly and annual awards is based upon the soundness, readability, completeness, reader appeal, accuracy, substance, originality of thought, authoritativeness, and the over-all merit and quality of the article.

Civilian Writers

Reimbursement for published articles submitted to the MILITARY REVIEW by civilian authors (to include retired military personnel, and reserve personnel not on active duty) is on an individual basis.

LIEUTENANTS NEVER CRY

Lieutenant Colonel Starr West Jones, *United States Army Reserve*
Associate Editor, *Guideposts*

This article is reprinted from the June 1955 issue of THE ARMY RESERVIST.

The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.

THE Army Reserve program, today, is a waste of time. Reservists spend the better part of their meetings chewing the fat and refighting the battles of the last war. The men who go in for Reserve duty are in it only for the retirement pay, or, are just plain suckers.

Who said it? A number of my own buddies from the services, who should know the facts; and some very sincere civilians, several of whom have even lost members of their own families in the last war.

Is the charge true?

Here are the statements I have had made to me in support of the charge, and my own answer to each.

Arguments

Sifted down, the arguments against Reserve military duty fall, generally, under these four headings:

1. Why put in your time now? Wait. If an emergency really arises they'll come and get you; retrain and reorient you and there you'll be, just like you were before.

2. You owe your evenings to your family. Too many children suffered during war years from not enough Dad.

3. It's OK for the young fellows, but you men who fought have already done your share.

4. Reserve training is limited, repetitious, and a waste of time.

My friends who said these things are not soreheads, and most of them are sincere. They are entitled to their viewpoint. However, I believe there are important arguments on the other side that have tremendous weight. Here they are. You judge how the scales balance.

Item One

If an emergency arises, they'll come and get me and I'll be retrained:

How much time for training, I ask, will there be in an atomic war?

If we do not maintain an active, well-trained, strong Reserve, instantly available to move to the reinforcement of active units stationed in farflung outposts, then the first warning we get of the next conflict may very well be the sound of falling timbers as our own homes collapse.

We know our potential enemies have powerful land forces. Certainly in case of war they will use them. We must be prepared to meet them at as great a distance as possible from our homes. We must prevent the principal cities of our country from experiencing the chaos of Pearl Harbor and the ruin of Hiroshima combined.

This is not idle or sensational speculation. It's the deadly calm voice of our atomic experts. A recall to arms, if we are unprepared, will put servicemen and civilians, alike, in the frontlines on our own front lawns—which may even resemble a last ditch.

I'm a pessimist? No, just a practical

American citizen who carries insurance on his car, his house, his life, and his health —what's so foolish about insurance against Communist-generated disaster?

Item Two

I'm told I owe my evenings to my family, that my children shall know more of a Dad's influence:

What about a Dad's example? How can I expect my four sons to develop character unless they see Dad accepting responsibility; putting out, visibly, to maintain the freedom we say we cherish?

Sentimental verbiage? Yet, everywhere, today, we see educators, clergy, citizen committees, and social organizations concerned with moral apathy on the part of youth and its view of the future. To me, schooling, churchgoing, and social orientation must fall flat on young ears that have already appraised a world their parents' actions tell about.

I hope to lead, not push, my sons into the future.

Item Three

The men who fought have already done their share:

Have I? Is there a yardstick which tells me where duty ends? Like others who have spent a long time away from their families while in the service, I naturally wish, now, to make up to them for the separation.

However, I also agree with what Infantry Captain Francis Reilly once said to me:

We cannot isolate our individual actions from those of our country. What we do in our private lives our country does before the world. If we fail, individually, to make sacrifices, so will our country. To create the kind of world I want for my children, our country has to sacrifice. . . .

Like Captain Reilly, I cannot limit myself to less than the utmost.

Item Four

That oft-expressed argument that Reserve training is limited, repetitious, and a waste of time:

From my own combat experience I remember particular instances where *older* Reserve officers (that's what I'll be in the next fracas) made costly mistakes because they didn't know. They had failed to learn things during the long periods of peacetime training. And, I remember young officers fresh from hard-won lessons at Fort Benning (and other training centers) who were never given an opportunity to use the valuable techniques learned because certain stubborn, back-number superiors issued "direct orders" for combat action to be executed in a stupid, bungling manner. What happened? It would make you weep.

But lieutenants don't cry. They only "yes, sir"—and do the best they can for the lives of those men who go with them at the command "follow me."

Well, I just don't want to make such mistakes on a strange battlefield, some unforeseen years hence. The lieutenants and their men will be your sons and mine.

Yes, we do talk about past battles at Reserve meetings; but it's mostly about mistakes we made, or observed, and how we can eliminate them in the future.

If we do not maintain an active, strong Reserve, ready to reinforce active units stationed in farflung outposts, our first warning of the next conflict may be the sound of falling timbers as our homes collapse

The United States Army Reserve (USAR) Schools, set up by the Department of the Army in each large commu-

nity, are providing supervised training equal to that received at the best camps during wartime. Like the one to which I'm now assigned in New York City, these schools provide meeting rooms for each branch of the service; specify time and subject matter to be covered, and provide reference data, field manuals, latest films, and training aids. The most competent instructors are selected from among the most experienced Reserve personnel available within the area to conduct the classes. Even in smaller communities, like Poughkeepsie (where I served for 2 years) although USAR Schools have not yet been set up, the same training programs are followed and the facilities improvised by the initiative and enthusiasm of the reservists.

In both these types of Reserve training I have observed a high proportion of men who believe, as I do, that our meetings are tremendously worthwhile because each man puts a lot of himself in to make them so.

We may not have *all* the answers before we face the music again, but we are keeping up to date and there's no doubt in our minds about what we're trying to be ready for.

And that's my answer to those who scoff.

I believe in the Active Reserve program because I believe in our country, my family, and my sons—and I want them to be *able* to believe in me.

Lieutenant Colonel Starr West Jones is a graduate of The Infantry School and the Command and General Staff College. He received his commission in June 1942, and served as an instructor in Training of the Individual Soldier at the Officer Candidate School, Fort Benning, Georgia. He served in Europe during World War II with the 42d Infantry (Rainbow) Division. He is presently Associate Editor of Guideposts.

The basis of the tremendous expansion of the Army that would be immediately necessary in the event we become involved in war would have to be our National Guard and our Army Reserve. The size of the active Army we need to provide national security depends absolutely upon how large, how well trained, and how well equipped are the reserve forces which supplement it and how quickly they can be mobilized in an emergency.

We are making every effort to increase the size of these vital reserve forces and to build into them the greatest possible capability.

* * * * *

Actually, we will never get the kind of a reserve we need through the operation of any law. We are not a militaristic people, and we are irked by military requirements in peacetime. We will not have a proper military reserve until the people of this country truly understand how essential it is to our security, until they see clearly that it will be very costly, perhaps fatal, in the event of war if we do not have it. When they do understand, they will get behind it, and support it.

Under Secretary of the Army Charles C. Finucane

ARMY AVIATION

Lieutenant Colonel George L. Morelock, Jr., *Artillery*
Faculty, Command and General Staff College

DURING the Louisiana Maneuvers of 1941, when a log served as a howitzer or a truck labeled "tank" could wipe out a squad, the Army "borrowed" some light planes from the manufacturers to test their usefulness for reconnaissance work and for adjusting artillery fires. The results obtained were so successful that the Army added light planes to the equipment of field artillery battalions, and began the training of pilots and observers. Acceptance by artillerymen of this new piece of equipment was enthusiastic and the "grasshopper" planes quickly became known as "the eyes of the Artillery."

Throughout the North African Campaign, the light airplane proved its worth, and the Army began an expanded program of pilot training and procurement. Two models were selected as standard—the *Cub*, or *L-4*, and the *L-5*.

These two planes were the workhorses of Army aviation during World War II. During invasions they were flown off aircraft carriers and "baby flattops"; off beaches, roads, and incredibly small fields during subsequent operations. Always well forward, they not only served as artillery "spotters," but came to be highly prized by commanders as a means of fast battlefield transportation. They were used to evacuate wounded, pick up and deliver messages, reconnoiter routes, and for battlefield surveillance. They laid wire, performed courier service, served as radio relays, were used for aerial photography and, in at least one instance, with bazookas mounted under their wings, performed as tank busters. Their versatility was matched only by the skill and courage of the liaison pilots who flew them. So well did they perform all assigned missions that prior to the close of hostilities in 1945, light aircraft were also assigned to the Infantry, Armor, Corps of Engineers, and Signal Corps.

The years between World War II and Korea were years of continued growth and development for Army aviation. Of special interest during this period was the helicopter. It had seen service during the war in limited numbers, and its capabilities appeared to be most promising. For this reason it was made the subject of intensive studies to develop and evaluate its military application within the Army. These studies culminated in 1949 with the Army establishing a requirement for large helicopters capable of carrying personnel, cargo, and equipment.

During the course of the Korean conflict, Army aviation came into its own. As of old, "the eyes of the Artillery" were again up forward and airborne, but this time in the *Bird Dog* or *L-19*. Flying alongside were companion *Bird Dogs* from the other arms and services that needed firsthand information of the terrain and enemy that were ahead.

Perhaps the most spectacular work was

The Army has an ever-increasing requirement to improve its mobility and attain greater battlefield dispersion and maneuverability. The best way to achieve these goals appears to be by air transportation

performed by the helicopters in aeromedical evacuation. The ability of the helicopter to rise vertically and land in areas that are inaccessible to other forms of transportation made it ideally suited for use as an aerial ambulance. That it was used to good advantage in this role is attested to by the 16,000 wounded who were evacuated by helicopter during the Korean conflict. Of this number many lived who would have died had it not been for the speed with which they were moved from the battlefield to the operating table. Some were evacuated from the frontlines to surgical and evacuation hospitals located to the rear, while others were flown straight from the battlefield to waiting naval hospital ships. All had occasion to bless the speed and comfort of the helicopter.

The first helicopter company to see combat action was the 6th Transportation Company (Helicopter). This unit had been activated at Fort Sill, Oklahoma, on 1 December 1950, as the 1st Transportation Company (Helicopter) and was later redesignated the 6th on 1 August 1951. Its mission, organization, and equipment had been worked out long before the first cargo helicopters were available to the Army; however, the planning for this unit was so sound that it was able to go into combat and perform its assigned tasks with a minimum of changes to its tables of organization and equipment.

The 6th Transportation Company (Helicopter) arrived in Korea in January 1953, and was followed by another helicopter company approximately 6 months later. Together these companies performed a total of six major tactical operations. Among these were an emergency resupply mission to forward elements of the 3d Infantry Division cut off from normal supply by flood conditions, and evacuation of casualties from the "Old Baldy" area. These companies, together with Marine Corps helicopters, were also used to ferry approximately 5,000 Indian custodial troops from an aircraft carrier anchored in Inchon Harbor to the Panmunjom area.

Army aviation is today authorized under the provisions of the National Security Act of 1947 as amended in 1949. This legislation provides "in general, the Army shall include such land combat and service forces and such aviation and water transportation as may be organic therein." Efforts to clarify the provisions of the National Security Act as it pertains to Army aviation have resulted in a series of agreements between the Secretaries of the Army and Air Force. The latest of these, dated 19 November 1952, provides, in general, that Army organic fixed-wing aircraft shall be of the utility or observation type with an empty weight not to exceed 5,000 pounds. Rotary-wing aircraft have no weight limitations, as such, placed upon them; however, all Army aircraft are restricted to the performance of the following functions:

1. Aerial observation—to include limited aerial photography.
2. Control of Army forces.
3. Command, liaison, and courier missions.
4. Aerial wire laying.
5. Transportation of Army supplies, equipment, personnel, and small units within the combat zone.
6. Aeromedical evacuation within the combat zone.
7. Artillery and topographic survey.

These functions are designed to fulfill the purpose of Army aviation as laid down in Army Regulations 95-5, *Army Aviation-General Provisions:*

Lieutenant Colonel George L. Morelock, Jr., served in Europe during World War II with the 376th Parachute Field Artillery Battalion, 82d Airborne Division. Upon his graduation from the Command and General Staff College in 1954, he was assigned to the faculty of the College where he is presently serving.

a. Expediting and facilitating the conduct of operations on land.

b. Improving mobility, command, control, and logistic support of Army forces.

c. Facilitating greater battlefield dispersion and maneuverability under conditions of atomic warfare.

At the same time, the provisions prevent infringement upon those areas of responsibility delegated to the Air Force by the Key West Agreement.

To fulfill the missions of observation and reconnaissance, the Army today has the *L-19* and the *H-13* helicopter. The *H-13* was the first helicopter purchased in quantity by the Army, and gave an excellent account of itself during the Korean conflict. Although primarily a reconnaissance aircraft, it was used extensively for aeromedical evacuation. Patients were carried in two pods on the outside of the aircraft. They were protected from the blast of the rotor by plastic hoods placed over their heads and warmed by electric blankets plugged into the electrical system of the aircraft.

To perform the many utility missions arising in its daily operations, the Army has purchased the *L-20 Beaver*. This plane was designed to meet the exacting specifications of the pilots who fly in the Canadian bush country, and combines good payload characteristics with a remarkable rough field takeoff and landing ability. It is presently assigned to divisions and higher headquarters, and carries five passengers or over 1,700 pounds of cargo. Two other aircraft of note in the utility field are the *H-19* and the *H-25* helicopters. The *H-19* saw service in Korea with the 6th Transportation Company (Helicopter), being used as a cargo and personnel carrier and as an aerial ambulance. Newer and heavier models are being produced to perform cargo missions. The Army is now accepting delivery of the *U-34* standard light cargo aircraft. The medium *H-37* helicopter, expected to be used in the future, will be in the 3-ton capacity field.

In the exercise of command, the Army, just as big business, has learned the value of economical, high-speed transportation. To speed its "executives" between installations and commands, the Army has purchased the *L-23*. This plane carries five passengers in addition to the pilot, and cruises at 180 miles an hour. The payoff here is in man-hours saved.

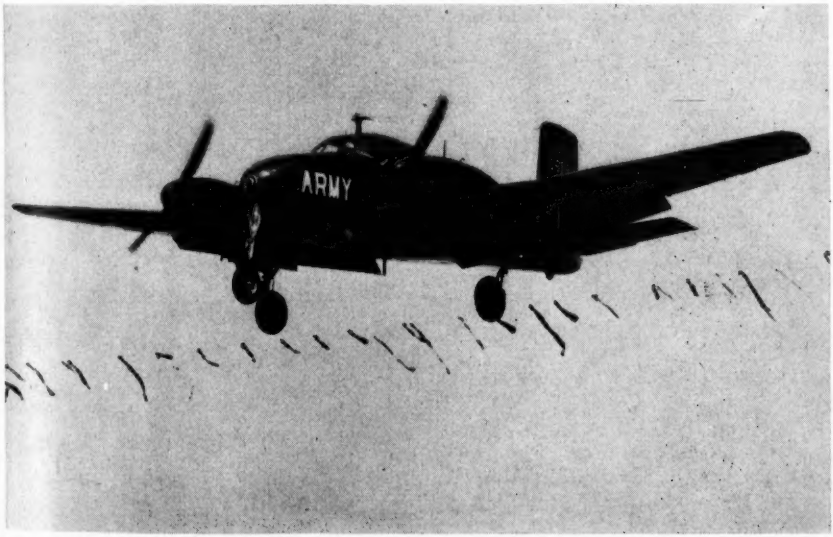
In the cargo 'copter field, the Army is procuring the *H-16* and the *H-21*. The *H-21* has a payload capacity of 1½ tons and will eventually replace the *H-19* in the Transportation Company (Helicopter). The *H-16* was originally conceived as a long-range rescue helicopter; however, its weight lifting ability and size—it is capable of accommodating three jeeps—has led the Army to procure it for logistic operations.

The future poses many problems. The Army will have an ever-increasing requirement to improve its mobility and attain greater battlefield dispersion and maneuverability. The best way to achieve these goals appears to be by air transportation, but what kind of aircraft is required for the job? The helicopter in its present stage of development is certainly not the final answer; although it does meet many of the Army's requirements and new uses are being found for it daily.

Perhaps the channel-wing plane with its designed ability to take off at 10 miles an hour and then cruise in the neighborhood of 275 miles an hour will provide the answer. Or, perhaps the solution to the problem will be the convertiplane which combines the takeoff and landing ability of the helicopter with the in-flight characteristics of a long-range, high-speed airplane. Whatever the answer may be in the way of future equipment, the prospects are good that it will be flown by—Army aviation.

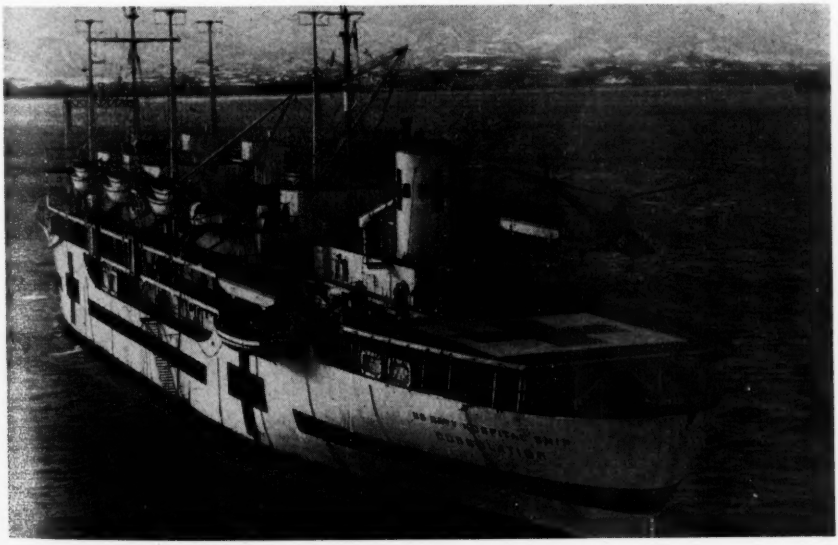
For many years the workhorse of Army aviation has been the observation and reconnaissance plane. Above, an *L-4* taking off from the 220-foot flight deck of a baby flattop. The *L-4*, which saw much action during World War II, is now obsolete. Below, the *Bird Dog* or *L-19* is the current standard observation plane used by the Army.

Designed for use in Canadian bush country and assigned to divisions and higher headquarters, the *L-20 Beaver* has proved a versatile member of the Army aviation family. Above, an *L-20* using free fall procedures on an aerial resupply mission. Below, the twin-engine *L-23* commander-courier plane making barrier approach for landing.



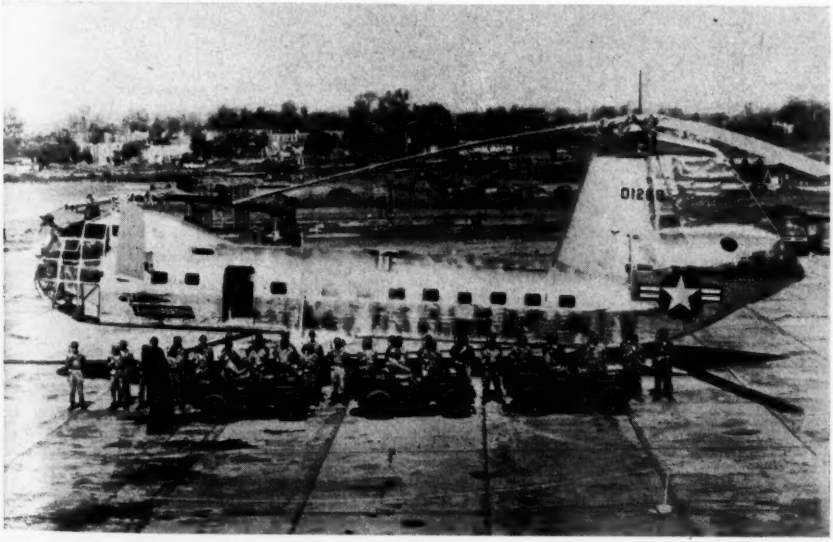
Aeromedical evacuation was responsible for saving countless lives in the Korean conflict. Above, a wounded soldier being carried to a waiting helicopter for evacuation from the battlefield to a rear area hospital. Below, an *H-13* helicopter bearing wounded in its protected external pods arrives at a medical collecting point.

The helicopter set new standards of speed in evacuating battle casualties during the conflict in Korea. Above, a patient being delivered to a helicopter for evacuation to a rear area hospital. Below, a rescue helicopter approaching the landing platform of the United States Navy Hospital Ship *Consolation* with a battle casualty.



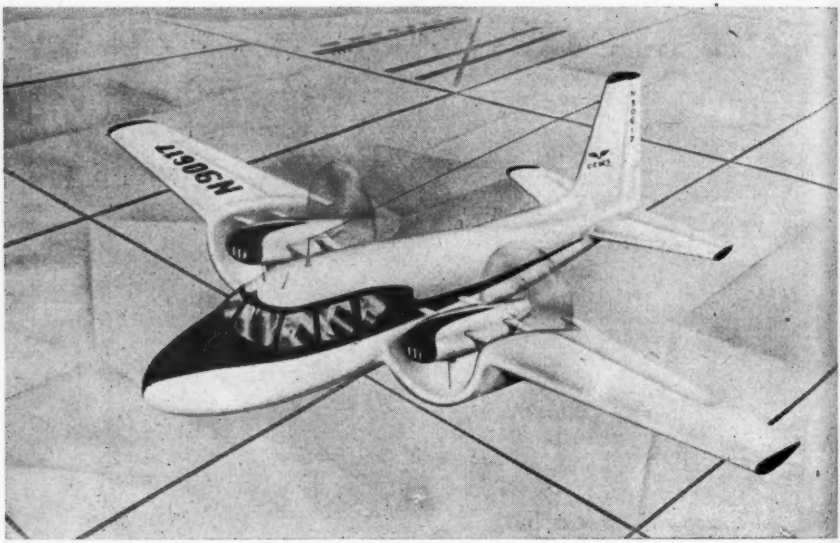
Classed as a utility aircraft, the cargo type helicopter has added a new flexibility and battlefield mobility to the Army. Above, an airborne *H-19* bringing in supplies and ammunition to assault troops during maneuvers. Below, first aid men transporting a casualty to an *H-19* helicopter aerial ambulance for evacuation to a hospital.

The helicopter in its present stage of development meets many of the Army's requirements and new uses are being found for it daily. Above, the *H-21* is classed as a light cargo helicopter. Below, the *H-16*, originally designed for the Air Force for long-range rescue, has been procured by the Army for use in logistic operations.



The cargo helicopter opens the door to a new field of transportation. Above, the *H-34*, a 4-blade single main rotor aircraft, represents a substantial boost over the *H-19*, although exact specifications are not now available. Below, a view of the experimental *H-37* which is to be the medium cargo helicopter of the 3-ton payload type.

In the exercise of command, the Army, just as big business, has learned the value of economical, high-speed transportation. Above, the *U-1*, newest addition to Army aviation units, carries a pilot, copilot, and 14 passengers or 3,000 pounds of cargo. Below, the *H-23* reconnaissance type helicopter during an approach for landing.



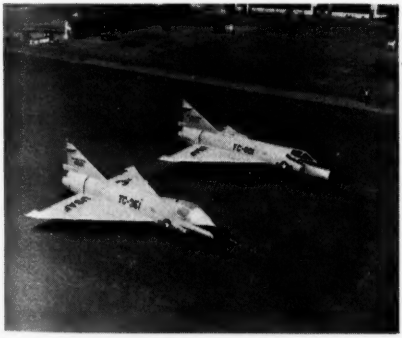
Planes of the future include the channel-wing plane and the convertiplane. Above, an artist's drawing of the channel-wing plane. Below, the *XV-1* convertiplane combines the vertical takeoff and landing ability of the helicopter with the flight characteristics of the conventional airplane.—All photos from Department of Defense.

MILITARY NOTES AROUND THE WORLD

UNITED STATES

Combat Trainer

Preflight testing has begun on the first of an undisclosed number of combat proficiency trainers for the *F-102A* all-weather



Trainer and production model of new plane.

Air Force jet interceptor. The new trainer has been designated the *TF-102A*. The 2-place side-by-side trainer was designed to familiarize trained jet pilots with the *F-102A's* performance as an integrated weapon rather than as simply another jet airplane. This is the first trainer specifically developed for any of the "century series" combat aircraft. If the need arose, the *TF-102A* could be flown as a fully tactical interceptor aircraft by either one or two pilots. Outwardly, the trainer differs from the *F-102A* primarily in a wider nose section as shown in the photograph with the *TF-102A* in the foreground. The student and the instructor, who sits at the student's right elbow, each has his own basic instrument panel. The same *J-57* engine with afterburner powers both planes. Widening the nose section for the trainer required slight redesign of the air ducts, canopy, and windshield. Some internal equipment was also relocated. Both planes will be assigned to the Air Defense Command.—News release.

'Flying' Reactor

By the spring of 1957 the Army expects to complete an atomic powerplant that can be transported by air. Work on the construction of the atomic reactor has already started at Fort Belvoir, Virginia. The aim of the project is to produce an atomic powerplant that can be carried by an airplane to remote places, particularly the Arctic where it is hoped it will solve the problem of heating and lighting. If the project succeeds, it would have important implications on the Arctic as a theater of war. Availability of power for light, heat, and communications would go far toward improving defenses in the deso-

late forward areas. It is reported that in some of the remote Arctic bases oil for heating and power costs $42 a barrel. Because of the difficult and expensive logistics of carrying fuel to the Arctic, the Corps of Engineers started a study about 4 years ago of the possible application of nuclear energy in remote areas. The plant being considered would probably be too expensive for any developed community; however, in the Arctic it would be relatively economical because one plane load of fuel would run the plant for several years. It is expected that the plant will generate about 2,000 kilowatts of electricity which is sufficient to supply the power needs of a community of approximately 5,000 persons.—News release.

Liaison Plane

The acceptance of an improved liaison airplane, the *OE-2*, which incorporates the latest improvements and innovations

Versatile liaison plane for Marine Corps.

for aerial reconnaissance work, has been announced by the Marine Corps. In addition to increased speed and maneuverability, the new plane affords far greater protection for the pilot and observer by being equipped with flak curtains on the cabin walls and seat backs, in addition to having seat armor and self-sealing fuel tanks. This latest addition to the Marine air-ground team utilizes improved radio and rocket target-marking equipment in accomplishing its mission. The aircraft is capable of carrying a 250-pound external load on each wing, which is useful in laying communications wire and dropping supplies. The plane has a service ceiling in excess of 20,000 feet.—News release.

'Gyroscope' Divisions

The Army has added the names of three additional divisions to the role of those participating in Operation *Gyroscope*. The divisions added are the 2d, 8th, and 9th Infantry Divisions. The 11th Airborne Division, now located at Fort Campbell, Kentucky, starts its move to Germany to replace the 5th Infantry Division this month. No home station for the 5th Infantry Division has been announced at this time. It is expected that the home station of the 11th Airborne will be Fort Bragg, North Carolina, as it will pair off with the 82d Airborne Division under *Gyroscope*. The 3d Armored Division will begin its move to replace the 4th Infantry Division around Frankfurt, Germany, in May. It is expected that its home station will be either Fort Hood, Texas, where it will pair off with the 4th Armored, or Fort Polk, Louisiana, where it would be paired with the 1st Armored Division. The 2d Armored Division, now in Europe, and expected to remain there for at least another year, will undoubtedly be paired with the 1st or 4th Armored Divisions. Under present plans the 4th Infantry Division will be returned to the United States only as a unit designation with its colors. The 71st Infantry Division designation will be withdrawn from the active Army rolls and the designation of the 4th Infantry Division will replace those of the 71st. In August or September 1956 the 4th Infantry Division will be reconstituted at Fort Lewis, Washington. In July of this year, under present plans, the 2d Infantry Division at Fort Lewis will begin exchanging places with the 71st Infantry Division in Alaska. In August the 8th Infantry Division at Fort Carson, Colorado, will

start its move to Europe to replace the 9th Infantry Division at Goppingen, Germany, and the 9th will return to Fort Carson.—News release.

Uniform Changes

A blue working jacket and a cloth cap with visor, designed for both officers and men, are among the new items of clothing scheduled for the Navy. A miniature cap device will be worn by officers and chief petty officers. The jacket has both a slide fastener and buttons. It is made of water and wind resistant blue cotton cloth and

New work jacket and cap adopted by Navy.

is lined with a fleece material. The cap is similar to those worn by baseball players with a visor and loose fitting crown. In addition the Navy is testing a new "ship-name sleeve mark" on the enlisted men's uniforms. The Navy has selected 16 ships to test the acceptability of the new shoulder patch which will display the name of the ship the man serves on. The name strip will be curved slightly to fit the shoulder and will be worn centered on the right sleeve on both dress blue and white jumpers. The ship name will be embroidered in white letters on a blue background. The new patch was designed with the idea that pride in the unit would be increased if

Ship-name sleeve mark undergoes test.

some method of identification with the unit was included with the uniform. If favorably received by the test group, the new patch will be adopted throughout the Navy.—News release.

Giant Submarine

The new giant Navy submarine will be powered by two atomic engines, giving the craft a speed equal to the fastest surface ships in a task force, if present plans materialize. It was predicted that by the 1960s all projected new Navy ships would be powered by nuclear engines. Congress has already approved the building of six nuclear-powered submarines in addition to the *Nautilus* and *Seawolf*. Four of these new ships will be smaller than the *Nautilus* and *Seawolf*. One of the remaining two will be a new attack type with

a speed even greater than the *Nautilus* and the other will be the Navy's largest submarine, to be powered by two nuclear engines. The craft is being designed to be fast enough to operate in conjunction with a fast carrier task force and to provide it with radar information. Neither the speed nor dimensions of the new vessel were disclosed, but there are reports that it will displace about 5,000 tons as compared with 3,000 for the *Nautilus*. The speed of the big submarine is expected to be over 30 knots.—News release.

Transfer Units

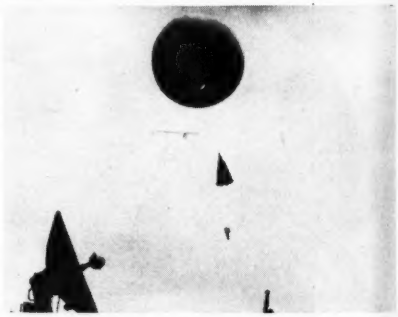
The 1st Armored Division, III Corps Headquarters, and some smaller supporting units will be transferred from Fort Hood, Texas, to Fort Polk, Louisiana, according to a recent Department of Army announcement. Polk was recently designated a permanent installation and its name changed from a camp to a fort. It was stated that the Army had agreed to station at least one division at Fort Polk in return for assurances by Louisiana that ample area will be available around the military reservation to conduct large-scale military maneuvers for at least 15 years. —News release.

Antarctic Base

Tentative Government plans for a permanent unit for Antarctic activity indicate the development of a growing United States interest in the South Polar region. The action is being taken on the recommendation of the Joint Chiefs of Staff and the Department of Defense. It has also been advocated by some that permanent human settlements be established in the area. Although the United States has sponsored several expeditions to Antarctica, she never has made any claim to territory there. She likewise has never recognized any claims by other countries which have sent expeditions to this area. The Soviet Union already claims a great deal of Antarctic territory. The Department of Defense gave no indication that any territorial claims are planned now. The director of an expedition now in the region has been instructed to advise and help other Government agencies in the preparation of any laws that might be necessary to set up a permanent unit within the Government to coordinate Antarctic matters.—News release.

'Express Balloon'

An "express balloon" that climbs at an average speed of 1,800 feet a minute and collects weather data miles aloft almost twice as fast as formerly has been developed by the Army Signal Corps Engineering Laboratories. It is equipped with radiosonde and a miniature transmitter flashes back vital weather statistics from varied



Fast-rising balloon speeds weather data.

altitudes to a ground receiving station which automatically records the information dispatched. Data on flights ranges from pressure, temperature, and humidity to elevation angles which enable compilation of wind speeds at any height. Information made possible through the new express service will be of benefit to general weather forecasting, aircraft, special guided missile uses, and to artillery forces. The new balloons are made of neoprene, a synthetic rubber. They are three times stronger than ordinary weather balloons and will stretch until they burst at an altitude of approximately 15 miles. The

balloons are inflated with 300 cubic feet of hydrogen, more than twice as much as used in standard type, thin-wall balloons which ascend at a speed of only 1,000 feet a minute. The improved fast-rising balloon ascends nearly straight up over the receiving station, ensuring faster, more direct reports.—News release.

Light Plane

A revolutionary light airplane designed to land or take off in less than 500 feet is expected to be flying shortly. Developed in secret and without Government funds, the craft, known as the *M-232*, has large movable wing flaps to deflect the propeller slipstream sharply downward for quick rise or descent. It was said that the piston-engine plane, carrying only a pilot, could be fitted with a pod to carry cargo or to move 4 to 6 men.—News release.

Reserve Shakeup

A Reserve that can be mobilized in 6 months is the aim of a large-scale reorganization taking place in the Army Reserve forces. Approximately 358 company size units not needed in the early stages of a war will be replaced with more urgently needed outfits. The revamping was ordered by the National Security Council last year which directed the Armed Forces to re-establish troop requirements on the needs of the first 6 months of war, rather than the previous 18 months' figure. The probable shortness of an atomic war was believed to be the reasoning behind the new figure. The Army now needs 1,692,235 men in the Reserves and National Guard, against the figure of 500,000 now on drill pay status. The basic division strength will not change, but important changes in missions have been ordered. There will be 10 combat divisions gradually built up to full strength of 14,000 men each while the original plan was to have 25 combat divisions in cadre strength, about 3,300 men each. In addition 12 divisions will be retained in cadre strength but on mobilization they will have the role of training divisions. Three other divisions will be converted into maneuver area commands to be used for conducting maneuver combat training. The units being replaced are mainly "station complements" that would move into an inactive post after mobilization and be put into operation, logistical, and transportation commands, and military government groups. They will be replaced by artillery and antiaircraft battalions and port and engineer outfits. The Army has already deactivated 193 small units and has scheduled 165 more for deactivation in the near future.—News release.

New Task Force

With the raising of the United States, Italian, and Atlantic Pact flags at Vicenza, Italy, the South European Task Force (SETAF) came into being. This new North Atlantic Treaty Organization element is composed of 5,500 United States soldiers who are the first United States combat troops to be garrisoned in Italy since World War II. Most of the troops were formerly stationed in Austria. They have been joined by an artillery unit, formerly stationed in West Germany, that is equipped with *Honest John* rockets.—News release.

New Type Parachute

A new type parachute that rotates automatically "like a fabric windmill" to provide greatly increased drag and stability has been developed recently. Known as the *Rotafoil*, the new parachute derives its name from its design description as an "autorotating airfoil parachute." It is not intended for use in human air escape but is intended to slow down and stabilize the descent of materials and supplies. Studies show that a *Rotafoil* weighing only 4 pounds can stabilize and keep from tumbling an object weighing as much as 6,000 pounds. It is also claimed that a 10-foot

diameter *Rotafoil* can be used in place of dive brakes on a 20,000-pound airplane. The new parachute derives its extra drag from centrifugal force causing the skirt or outer edge of the parachute to flare out. This rapid spinning action, ranging from 1,500 to 3,000 revolutions a minute, also creates added stability. A low friction swivel permits the parachute to rotate without twisting the shroud lines.—*Aero Digest.*

Landing Gear

The crosswind landing gear used as a standard production item on the Air Force *B-52 Stratofortress* marks the first time this type gear has been used on a production jet airplane. The new gear can be prepositioned from the control cabin to permit the airplane to take off or land in an attitude that cancels out the effect of crosswind. All four of the dual-wheel main-gear units swivel. In landing the pilot merely has to continue his correct heading.—*Aero Digest.*

Sun-Powered Radio

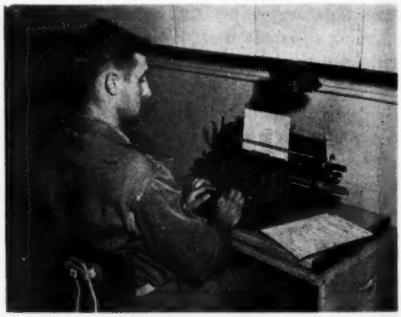
An experimental radio receiver powered by sunlight was demonstrated recently. The new radio has eight transistors instead of vacuum tubes, the same sensitivity and receptive qualities of a standard radio, and its power is collected from light—sun or artificial—by seven solar cells mounted on its cabinet. Except for the solar cells, each about the size of a silver dollar mounted in a plastic strip, the receiver resembles any table model now in use.—News release.

Control Console

The development of a more efficient control console for control tower operators at Air Force bases has been announced by the Air Research and Development Command. The new console enables tower operators to control runway lighting, keep posted on weather information, log flight plans, maintain radio contact with aircraft, and keep in touch with the radar approach control station. The device is destined to become standard equipment for Air Force control towers and is called the Universal Control Tower Console. The unit can utilize high or low frequencies and can be adapted to any navigational aids.—News release.

Language Writer

A durable, space and weight saving machine which is designed to utilize more than 50 foreign language type fonts has been designed for the Army and will be



Newly developed device makes use of 50 languages possible by merely changing fonts.

incorporated in mobile psychological warfare printing units. Using this typewriter-like device, nonlinguistic United States Army personnel will be able to prepare messages in totally unfamiliar foreign tongues. Research on the machine was undertaken to satisfy requirements of the United States for a means of communicating with populations in the major political and geographic areas of the world. Logistical and operational problems pointed out the need for eliminating bulky, movable type, typesetting and reproduction equipment, and for reducing related operating difficulties in the field. The machine adopted with its interchangeable type fonts made the problem simple in languages where the Latin alpha-

bet was used. The problem was different with Hebrew, Arabic, the Indochinese languages using Sanskrit, or a language such as Burmese, with over 700 characters. As a result of much research the 50-language machine was developed, and included is a reverse carriage model which types from right to left, needed for writing Hebrew, Arabic, Persian, Urdu, Malayan, Jowi, and Pushtu. The machine is simple to operate. The message is written in the language desired by a linguist. Appropriate numbers for the characters are then substituted by the linguist with diagonals, circles, and squares being used to indicate punctuation. With the proper font in the machine the operator merely strikes the keys according to the numerical sequence of the message. Completed, the typing resembles commercial printing. This is photographed and an offset plate is quickly made and printing begins. The machine is about 12 inches high, 18 inches deep, and 27 inches long. It weighs approximately 40 pounds.—News release.

JAPAN

Enlarge Military Force

Beginning with the new fiscal year in April, Japan expects to add 21,000 men, 33 ships, and 253 planes to the nation's military forces. The move represents another step toward the figure of 350,000 men for the armed forces which the United States has said is the number of troops Japan will need for self-protection.—News release.

Build Jets

During the coming year Japan hopes to produce experimentally the country's first home-designed jet plane and an "underwater plane" firing rocket torpedoes. The weapons were included in the Defense Board's request for a research budget of over 5.5 million dollars. The Japanese jet would be a light trainer with a thrust of from .7 to 1 ton. The board said it was dissatisfied with its present American-made *T-33* trainers because the thrust of 2 tons requires too much fuel. The underwater plane would be an improved version of the old Imperial Navy's *Kairyo*, or *Sea Dragon*, built in the later stages of World War II as a suicide submarine. The board also plans to purchase 10 guided missiles from Switzerland for research.—News release.

AUSTRALIA

Atomic Tests

Great Britain plans two series of atomic weapon tests in Australia during the coming year. The first test will be conducted in April at the Monte Bello Islands, off northwest Australia, and the second will be at the new Maralinga proving ground, north of the Trans-Australian Railroad and 500 miles west of Woomera. This will be the third and fourth series of atomic tests in Australia. It was reported that no test would exceed "a few tens of kilotons in yield and some would be smaller." The Maralinga tests are expected to include guided missiles with atomic warheads. Emphasis on the smallness of the explosions may indicate that the efficiency of new bomb-detonating systems may be tried out, or that a number of atomic weapons other than bombs will be tested.—News release.

GREAT BRITAIN

Cut Forces

A cut in military forces of about 100,000 men in the next 2½ years has been announced by Great Britain. It will be accomplished mainly by reducing the number of draftees.—News release.

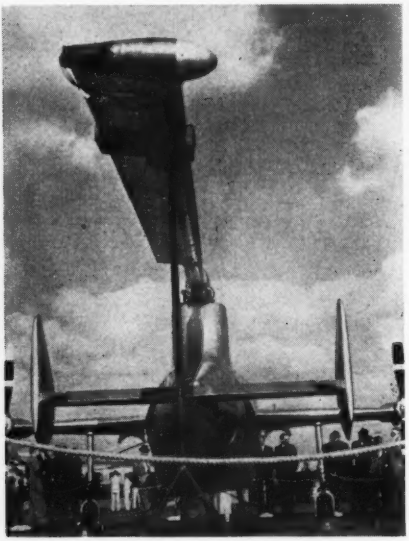
Rocket-Jet Fighter

A rocket-jet fighter expected to attain a speed of 1,500 miles an hour is being built in Great Britain according to a recent announcement of the Air Ministry. It also disclosed work on two other planes

designed to pass the speed of sound in a climb. The rocket-jet fighter is called the *SE3* and it, along with several other aircraft, was placed on the "advance publication list." This means that descriptions but no detailed specifications may be published.—News release.

'Gyrodyne'

An experimental tipjet-powered helicopter was displayed in Great Britain recently. The plane's piston engine drives a compressor which supplies compressed air through the hollow rotor blades to pressure jets at the tips where it is mixed

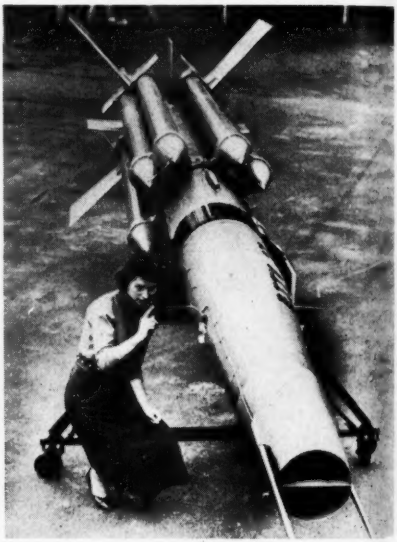


Tipjet helicopter undergoes development.

with fuel and burned. The first prototype flew in 1947. A modified version flew in 1954 and became the first British jet helicopter.—News release.

Ramjet Engine

British scientists are experimenting with a pilotless ramjet, a combination of rocket and turbojet, and have developed a model to the stage where it will do nearly 2,000 miles an hour. The ramjet, which can be used for supersonic flight or in guided missiles, gets its initial boost from rockets which slide away from



British study 2,000-mile-an-hour engine.

the main body in flight. The turbojet main body does not function until it is traveling at 1.5 times the speed of sound. The ramjet engine has been launched, but its speeds and the heights attained are secret. —News release.

Drop Tanks

A demonstration of a plastic drop tank was conducted recently in Great Britain by the *Hunter*. On the *Mark 6 Hunter*, two tanks, a bomb, and a rocket store were installed and the plane went through a series of tight rolls and runs at high speed over the airfield without showing the effects of this extra equipment in any manner. The tanks are made from asbestos-based plastic and are fully combat rated. They are designed for quick assembly in the field and are capable of withstanding considerable longitudinal ac-

celeration and can thus be carried on catapult-launched aircraft. The *Hunter* has flown at supersonic speeds with this type of equipment. The type demonstrated was a 100-gallon size.—News release.

Atom-Age Carrier

HMS Ark Royal, Great Britain's first aircraft carrier designed for the atom age, has been fitted with television equipment. It is capable of being operated by

Atom-age carrier has the latest equipment.

remote control with the crew in sheltered compartments. The new flattop has the steam catapult, angled deck, and mirror landing aid, three British postwar inventions. The television equipment is used for both operations and entertainment to all parts of the ship.—News release.

WEST GERMANY

Produce Electricity

A method of producing electricity directly from fuels has been exhibited in West Germany. An electric current was produced by combining oxygen and hydrogen in a "fuel element." The "fuel element," which operates without igniting the fuels, had an efficiency ratio of 70 percent, compared with the 40 percent efficiency of the internal combustion engine. It was reported that British, Soviet, and American scientists were working on similar projects. Theoretically it would be possible to use oil in a "fuel element" which would drive an electric motor. This new source of energy was said to be cheaper and safer than atomic energy. Development of the method, combined with the use of atomic energy, would enable the world's dwindling coal resources to be used exclusively as valuable raw materials for the chemical industry.—News release.

POLAND

Extend Service

Men in antiaircraft units in Poland must serve 3 years instead of the present 2 years. Any widespread application of such an extension throughout the Army would virtually nullify the recent Warsaw announcement that Poland's armed forces would be cut by 47,000 officers and men in the near future.—News release.

USSR

Atomic Tactics

From a study of proposed defensive tactics in the Soviet Union, it appears that the Soviet Army High Command is not deeply concerned about the prospect of large troop losses caused by atomic radiation in the event of a third world war. Among the basic premises of Soviet Army atomic defense theory are those that men subjected to radioactive radiation need not be withdrawn from action; troops against whom atomic weapons have been used can continue to fulfill their duties—consequently atomic defense must ensure avoiding even a temporary halt to their activities; and atomic defense can be organized in any tactical situation, anywhere and in any weather. Thus it appears that Soviet Army leaders are prepared to sacrifice large numbers of troops in the event of an atomic war, in line with the "human sea" tactics employed during World War II. It was revealed that the Soviets are very optimistic concerning heat waves. They assert that foliage offers good protection, that in a forest and even

in the shade of a single tree, burns are not very probable and the likelihood of large-scale forest fires is remote, as the shock wave would put out the flames. It was reported that the Soviet Army has gone over from general, theoretical considerations to a practical study of concrete methods of defense and has even begun training its troops in their use. At the same time, the views of the Soviet Union's probable enemies on tactics to be employed when atomic devices have been brought into operation are being studied and made known to the Soviet troops. From this Soviet tactics are being worked out both in theory and in practice. It appears that atomic weapons are being introduced into the daily life of the Army as standard equipment. Soviet atomic defense as a whole comes under the jurisdiction of the *MVD* and not the Army.—News release.

Arctic Route

Increased use of the Arctic sea route to move supplies and equipment to the Far East and Siberia is being made by the Soviet Union. Grain produced in Western Siberia is also being exported—transported by way of the Irtysh and Ob Rivers, which flow toward the Arctic Ocean. It was revealed that a freighter equipped for Arctic navigation recently made a trip of more than 6,000 miles from Archangel to a port on the Sea of Okhotsk in 27 days. The same voyage required 65 days when the Northern Sea route was opened in 1932. The improvement in weather forecasting techniques was credited with promoting Arctic navigation. Floating polar stations have contributed to this improvement. It was reported that the Arctic sea route is being used by many hundreds of ships to supplement the Trans-Siberian Railway in supplying Siberian and Far Eastern settlements. Arctic ships go upstream on the Kolyma, Yenisei, and Khatanga Rivers to supply manufactured products and bring out forest products and other exports. Part of the grain crop from the Novosibirsk area will be shipped by sea. Special ice-cutters have been constructed to make the path through the Arctic Ocean for the shallow-draught grain ships.—News release.

Satellite Rockets

Specifications for Soviet satellite rockets reveal that the first vehicle will weigh between 75 and 100 tons, with a 120-ton thrust. It will have a range of 1,800 miles. The program is costing the Soviet Government approximately 20 million dollars. It was reported that two phases of the rocket, which presently measure 150 feet, have been completed. The final step would add 50 more feet. The payload will weigh 1 ton. The Soviet Union plans to include numerous instruments in the payload to measure effects of outer space, but they, like the United States, are mainly interested in cosmic rays. It was reported that the Soviets have been engaged in rocket work since 1903. This work, coupled with that of German rocket pioneers who were taken behind the Iron Curtain, has given the Soviets a headstart in rocket techniques.—*Aero Digest.*

EAST GERMANY

Replace Troops

Soviet Army units along the East-West German frontier are being replaced by East German troops it was reported. East Germany's special frontier police force of 36,000 men has been incorporated into the East German Army.—News release.

IRAQ

Arms Shipments

Under a bilateral military aid agreement, Iraq has received arms valued at 10 million dollars from the United States since September 1954. The shipments have included 40-mm antiaircraft guns, 120-mm antitank guns, large quantities of ammunition, telecommunication, and engineering equipment.—News release.

FOREIGN MILITARY DIGESTS

Will Aviation Supplant the Other Branches Of the Armed Forces?

Translated and digested by the MILITARY REVIEW from an article by General Bruno Lucini in "Rivista Aeronautica" (Italy) December 1954.

IN 1945, FOR the first time in history, a nation declared itself defeated without the enemy's having yet set foot on its soil.

The defeat of Japan by the United States before material territorial occupation, and with powerful Japanese ground forces available which would have been able to offer resistance to the invader, is so surprising an event that it causes one to seriously wonder if, with it, the far-seeing concepts of the precursor of aerial warfare, General Douhet, were not unexpectedly confirmed.

The Douhetian doctrine, for decades either exalted or condemned, has, in these recent times, found a new champion in the valorous pilot, Major Alexander P. de Seversky. Especially in his work, *Air Power: Key to Survival*, Seversky, although addressing himself only to his fellow countrymen, takes up the thread of the ideas of the Italian general and proclaims the absolute and incontestable pre-eminence of aviation over the other two branches of the armed forces now destined for secondary and entirely defensive tasks.

The brilliant and impassioned proponent of superairpower affirms that only by the massed employment of powerful strategic aviation, with jumpoff bases located on the American Continent, will the United States be able to conquer the Soviet Union. He adds that rather than waste American money in aid of the armies of the nations of Western Europe, which are destined to be weak for many years, it is better to spend it on strategic aviation. These same nations would receive indirect protection from the great and long-range air action developed by it, destined for knocking out the industrial centers of the Soviet Union and, thereby, drying up the sources of supply for her Armed Forces.

The arguments of Seversky, inspired by realistic patriotic motives and reinforced by technical considerations, although not always entirely convincing, give rise to a feeling of anxiety.

Moreover, there are those, today, who

affirm that the old concept of the decisive importance of "control of the seas" is replaced in our days by that of "control of the air." The one who possesses it or obtains it is destined to conquer. All of this is independent of the employment —or not—of the atom bomb and its scientific perfection.

Others maintain that in a future conflict major supply activities by land and intercontinental supply by sea will be made impossible by air offensives—in the latter case aided by submarine—to the point where it will bring about a hitherto unexpectedly grandiose development of the logistic supply of populations, in addition to armed forces, predominantly by air.

Advance

In other words, 50 years since the first mechanical flight, the airplane is not only more and more permeating every manifestation of human activity, but seems destined to become the only decisive means of combat between peoples.

The fact should be emphasized, in this connection, that even those who refuse to accept fully such subversive prophesies (to them) regarding war—the defenders themselves of wars conducted in accordance with the traditional systems of ground and naval warfare—do not hesitate, now, to adopt the terms "air-ground" and "air-naval" to indicate any action which has the land or the sea as its predominant locale thereby giving recognition to the importance and omnipresence of aerial means. In short, the traditionalists find themselves forced to admit the great repercussions which air-landings, especially in their most spectacular aspect—that of the so-called vertical envelopment—would have today, and to a still greater degree in the near future, on operations conducted in accordance with the methods of the past.

Such a profound revolution in military thinking as that initiated by Douhet and now supported by Seversky, with the modifications in armament programs caused by its adoption, must be disturbing. On the other hand the advances of aviation in the last decade alone have been so rapid they give rise to the thought that if they continue at the same uniformly accelerated rate, that in a matter of a few years civil communication systems will certainly be altered. Consequently, the life of the people and, finally, what is of most interest to the professional military, the methods of warfare that may be employed in another and threatening world conflagration, will also be affected.

All things considered, is it possible to give an answer to the question posed at the beginning of this article?

Will aviation really supplant the other branches of the armed forces?

Arguments

Let us listen a moment to those on the other side, the side which denies the supremacy of airpower. These people express themselves about as follows: The case of Japan was an exception, that of an insular state in a theater of war, the Pacific, which was very unusual in point of vastness of marine surface and relative scarcity of land areas. Moreover, if aviation did achieve so brilliant a success there, it did this thanks to the navy which not only protected the transoceanic supply of the advanced insular airbases themselves, as they were conquered one by one, but certainly furnished it many of its mobile airfields: the airplane carriers.

In addition, it was ground forces which materially conquered the various successive airfields—the islands—necessary for the gradual approach to the Japanese shores. These forces, together with air-naval forces, defended it against Japanese counteroffensives.

Hence, rather than with a victory obtained by aviation, we are dealing with a victory by the three branches of the

armed forces acting in close cooperation. On the other hand there is the case of Germany which seems to be the exact opposite to that of Japan. In spite of an unparalleled air offensive conducted over a period of many months in 1944-45 with imposing Allied means, Germany did not go down until she was conquered materially, foot by foot, and the last square mile of her territory occupied.

In corroboration of the inanity of the aerial offensive directed only at bringing the adversary to his knees, we have the other historical example of the failure of the "Battle of Britain" in 1940. During this period Hitler saw his dream of conquering his then most stubborn enemy vanish, as the result of having desired to avoid recourse to the antiquated but drastic means of an invasion.

The objection is made to Seversky that his system of warfare, based almost exclusively on the strategic aerial bombardment of the Soviet industrial zones, depended most on the happy but, alas, temporary situation of a monopoly on the part of the Americans of the atomic weapon. Today, when the adversary is also able to make use of them, even if to a smaller degree, it is not considered that the effects of only 10 Soviet nuclear bombs against the localized industrial centers of the United States will, of a certainty, be any less grave than that of 100 American bombs against Soviet installations dispersed as they are in little-known regions.

Granting that it is possible today to accept Seversky's doctrine of war, would this still be possible 5 or 10 years from now?

Thus far technological development in the Western camp is several years ahead of that in the Eastern one, but what assurance do we have that some painful surprises may not be hidden behind the Iron Curtain?

Should not the unexpected appearance of the famous *MiG-15*s in the skies of Korea be regarded as a warning?

Placing all one's hopes on strategic aerial bombing could prove to be an irremediable mistake. What if the Soviets succeeded in perfecting an effective system of defense in the meantime? The entire effort of preparation for war, based on long-range bombers, would then be found to be unexpectedly useless and, having neglected adequate preparation of its navy and army, the Western bloc would not be able to resort to the use of other arrows for its bow, now of negligible effect due to lack of foresight of a technological character.

The experience of many centuries shows that a new weapon has never, of itself, decided a war, that the antidote for it is soon discovered, and that it inexorably ends in taking its place in the arsenal alongside pre-existing weapons—as a new means, effective as you wish, but not decisive in itself.

The arguments of Seversky's opponents, thus far but summarily reported, contain undeniable points of validity which make it doubtful whether it would be wise to run the risk of staking everything on one card: aerial bombardment. Although these arguments cause one to hesitate about investing all resources in the strengthening of this special means to the detriment of the others and of the ground forces, they are not sufficient for absolutely refuting at least a certain pre-eminence of the aerial sector over the others.

A later examination of the strategic aspect will provide other data for a reply.

History shows us that it is vain to attempt to fell the Muscovite Giant by an invasion of his territory from the west.

The bitter experiences of Charles XII of Sweden at Poltava, of Napoleon at Moscow, and of Hitler at Stalingrad stand in testimony of how the vastness of those regions fatally transforms itself into a tomb for the most seasoned ground army.

Today, in an era of intensive mechanization of armies, this is perhaps still more true than in the past when one considers the extreme scarcity of communication routes that everywhere characterizes the Soviet Union.

Nor is it anything more than idle talk to speak of being able to supply large bodies of armed forces almost entirely by air, even in the near future. In fact it is today regarded as impractical to effect the logistic supply of only a few airborne divisions in enemy territory for more than a very few days. So true is this that in planning large operations of vertical envelopment we are obliged at the same time to make provisions for the sure and rapid link-up of such forces with others operating on the ground.

An attempt to conquer the Soviets in the field, the terrestrial field in which at the present time they possess undeniable superiority, appears puerile, to say the least.

Naval Action

Since the land route appears to be out of the question, we are tempted to think of that via the sea, if for no other reason, because of the naval supremacy which, today, is the practically indisputed appanage of the West.

The Soviet Union, however, practically self-sufficient if regarded in her Eurasiatic continental ensemble, is almost immune to traditional naval methods of attack.

Where would one cut her streams of maritime traffic? Where are her great surface fleets that one would destroy in decisive air-naval battles? Where are her coasts that are suitable for the establishment of beachheads for continental invasions? We might make an exception in the case of those of the Baltic and the Black Seas on which large landings, at least in the first phase of a conflict, would be the equivalent of dooming the forces employed in them to destruction.

Air Action

Naval forces thus being impractical, there remains nothing else to do but to return to aviation. This really appears to offer good chances of success.

The factors that have always operated in favor of the Empire of the Czars as well as in favor of the USSR—enabling her to endure powerful blows without going down—such as the vastness of their territory, "General Winter," and the scarcity of communications have practically no influence on long-range, attacking air forces. This circumstance, therefore, favors the efficacy of their action.

Is it really in the third dimension, thus far never tried against this adversary, that we will find the Achilles' heel of the Russian Giant? It is to the great merit of Seversky to have pointed this out, I believe, for the first time. Seversky is an ex-Russian Imperial aviator and, therefore, a profound connoisseur of his native milieu.

In this singling-out of the weak point of the Soviet organization we find, perhaps, the principal point of merit of Seversky.

Once having decided to pursue this course, there is no doubt but that the method of attack will have to be that of Major de Seversky: prolonged mass bombardment of the Soviet industrial nerve center—or rather of her many centers, for such they are—and of Soviet communications.

Where Seversky would find me differing with him is in his claim that these destructive actions must be effected by air units located solely on the American Continent itself.

He affirms that the money spent today, not only for European armed forces but also for the European and African airbases, is money thrown away when the radius of action of modern strategic bombers enables them to reach these same targets from American bases.

Even from the point of view of the cost of this—an argument which, not without reason, is a weighty one for the American citizens who are called upon to support it—will it be as economical to have these colossi of the air make these long voyages when the same results can be obtained by taking off from European or African fields? This conclusion is reached without taking into account the many causes—due to mechanical failures, the human element, and weather—of decimation in such air formations on long flights.

I here yield the floor, however, to a much more authoritative and qualified dissenter of Seversky, General Omar N. Bradley, who expresses himself as follows in his "A Soldier's Farewell":

. . . bombing at 3,000 to 5,000 mile ranges is the most expensive form of strategic air attack. If the ranges are shorter, fewer airplanes can do an effective, sustained job of bombing; many more trips can be made by the same planes in the same interval of time, less fuel is needed, and the wear and tear of long hours in the air on the crews is diminished. At present, if war were thrust upon us, from bases on the territory of our allies we could strike at the vitals of Communist power from much shorter ranges and from many different directions. We could use lighter, faster, cheaper bombers of several types. Our strikes could be far more frequent, our air tactics more varied. Defense against such attacks would be many times more difficult than if the enemy could concentrate against the big, long-haul planes coming over the polar cap. . . .

I do not believe that more need be said.

These considerations reveal the desirability and the necessity of the Western bloc's ensuring for itself possession of the European and African airbases.

Still more valid reasons will show, however, that it is absolutely indispensable for the allied nations to maintain possession of the territories of Western Europe.

Time Element

In the seemingly well-grounded assumption that an implacable air-to-ground offensive à la Seversky would succeed in bringing down the Soviet Goliath, in what length of time could this be accomplished? The answer is certainly not in any short length of time. During this period which would amount to several months at least —a period necessary for the effects of the aerostrategic pounding to work its way through the logistical arteries feeding the Soviet ground forces and throttling their vitality—these forces, if they did not find their way blocked by Western ground forces, would in the meantime overrun all of Europe and appear on the shores of the Atlantic.

It is a well-known fact that if the Western World possesses, today, a large margin of economic and industrial superiority over the corresponding Soviet potential, this margin would disappear and become semiparity in the event Moscow should succeed in annexing Western Europe with all its matériel, technical, and intellectual resources. Under these conditions the Kremlin would feel itself in a position to undertake even a very long war and with good chances of success.

Under such circumstances the United States would find herself forced to knock out the adversary by all possible means, to extend to the industrial centers of Western Europe the atomic treatment—or some other form of massed attack—originally intended for Soviet soil. The prospect of such a thing, if not a smiling one to Europeans, nevertheless certainly does not have any place in the plans of the United States.

I do not believe that the necessity for having well-organized Western ground forces on the European Continent requires any further demonstration. Their pres-

ence there in time of peace will make the Soviet Union hesitant in the face of the very problematical outcome of an invasion as far as the coast of the Atlantic is concerned. Upon the outbreak of hostilities these allied ground formations would see to the conservation for the Western bloc of all its resources. They would protect the advanced allied airbases whose employment would be so much more economical than the remote bases in the United States. They would protect the beachhead areas for the arrival of American aid.

Supply

Since it is impossible for any other force to be qualitatively or quantitatively capable of taking the place of ground forces—or better air-ground forces—in the defense of Western Europe, it becomes necessary to think of supplying these forces.

Only Atlantic naval transportation will be able to handle the resulting heavy bulk of traffic. That the freighter retains unaltered its privileged position with respect to aerial transportation is obvious when we consider the relative lack of economy of the latter means.

Admiral Daniel V. Gallery of the United States asserts that 33 pounds of oil are sufficient for the transportation of a ton of freight across the Atlantic by ship, as opposed to 2 tons of high octane gasoline for transporting it by air.

However, the existence of heavy maritime traffic requires corresponding means of protection for ensuring this traffic against submarine, air, and surface attacks. That is, it requires naval forces for this important security mission.

Admiral Robert B. Carney expresses this concept in a very effective manner:

. . . in a great war, both ground and air forces are great consumers, and it is the naval forces which make possible the feeding of the voracious maws of the other arms. . . .

Conclusion

The moment has come to reply to the question posed at the beginning of this article.

Accepting the idea that perhaps the only instrument that has a good chance of knocking out the Soviet Union is strategic aerial bombardment, and taking into consideration that the successful accomplishment of such an operation will require a minimum of many months, we deduce that it is necessary to protect the territories of Western Europe from Communist invasion for two reasons: that of preventing the Eastern bloc from building up large resources and, that of retaining advanced airbases for long-range bombers. There follows from this the necessity of protecting the oceanic traffic lanes in order to feed the fight.

The first task, conducting the aerial offensive, devolves on the air force. The second, the defense of the European territory, is common to the ground forces and aviation. The third task, the protection of traffic, is entrusted to naval forces and aviation cooperating.

Aviation may be called upon, whether in defensive or in counteroffensive actions, to collaborate closely with ground forces in air-landing operations and the aerial transportation of large units.

In the brief sketch thus far made of the requirements which I consider should be met for undertaking, with hopes of success, a much undesired third world conflict, we see that it is not just *one* type of armed force that is called on to face it, but that all have vital tasks, and none of them are secondary. And this is true in spite of the offensive and probably decisive character of strategic aviation whereas the missions of ground and naval forces, at least those during the initial phase, are predominantly defensive. For without the aid of the others, the air force could not hope to achieve lasting results.

The harmonious employment of the three armed forces in combined efforts is the principal guarantee of initial resistance, eventually leading to victory for the Western Powers. This rejects the idea of the predominance of any one of these over the others and excludes a hierarchy of their values. This represents the result, neither new nor original, of the examination made.

With this basic notion gained or, rather, confirmed, a concrete evaluation of the contribution required of each individual armed force for confronting the ensemble of missions now regarded as indispensable is perhaps useful.

One undeniable fact is evident: namely, that aviation will participate indiscriminately in the fulfillment of all missions—either alone in those presumed to be aerostrategically decisive, or in conjunction with either ground or naval forces in the others.

Although it is extremely difficult to determine exactly the best proportion of aerial aid necessary, whether for ground or naval forces, we cannot but recognize that the major part of the load in the over-all action will fall to the lot of the air force.

If, then, we pass from a complete examination of the armed forces of the entire Western bloc to the partial examination of the forces of the binomial "United States-Canada" on one hand, and the ensemble of the allied nations of Europe on the other, more precise details may be revealed.

The two American nations, strong in their exceptional economic and industrial power, have a practical monopoly over all the allies, of both capacity for aerial strategic bombardment and the protection of oceanic traffic. To them, therefore, in the scale of relative precedence in usefulness the army appears less necessary—the ground forces in Europe can be more economically provided by the European states themselves—and for this reason it is right that the army should be sacrificed to the other two armed forces and that these should be absolutely predominant.

The situation of the Western European nations, Italy included, is different. There the gravest and most essential missions devolve on their ground and air forces to an almost equal extent. It is these two forces that are assigned predominantly the means for developing and training themselves.

Less imperative, however, mainly because of the great American naval power which is permanently present even in Europe's interior seas, is the obligation to protect maritime supply. Integration of naval forces will apply solely to those of the European nations and the only missions assigned to them will be those strictly connected with the national territories.

Our survival as a free nation depends upon our ability to continue a firm and sustained combat readiness. Certainly, we must be prepared to fight and to win if our most conscientious efforts to preserve peace should prove unavailing.

If, despite all these efforts, war should come, then—whether it be a small or large war; whether it be fought with conventional or atomic weapons—our land, sea, and air forces must operate as a closely integrated team in order to defend our homes and to bring about the defeat of the enemy.

Secretary of the Army Wilber M. Brucker

The Effects of Atomic Weapons on Military Operations

Digested by the MILITARY REVIEW from an article by Lieutenant Colonel W. F. Caplehorn in the "Australian Army Journal" April 1955.

This article is copyrighted and may not be republished without permission of the Army Headquarters, Australia. —The Editor.

THE aim of this article is to discuss the tactical employment of atomic weapons in the field, with particular reference to the defense; and as a result of some quantitative estimates of the effects of atomic weapons in various tactical situations, to bring out some of the more important lessons which will determine the most effective measures, both active and passive, which can turn the introduction of atomic weapons to our own advantage.

As the effects of atomic weapons represent an increase of weapon effectiveness by an order of magnitude, we must be prepared to examine tactics and organization from primary principles to decide whether basic changes in either or both may be necessary.

Throughout our discussion, we must keep constantly in mind the twofold problem:

1. The adaptation of the field force to suit atomic conditions.

2. The best use of our resources to obtain the maximum effectiveness with conventional weapons. For example, in dispersing our force in a defensive position we must ensure that we do not leave ourselves open to defeat by conventional means.

Probably no previous single change in the materials for waging war has provided such a scope for detailed analysis. We have seen a few of the early attempts to provide the answer in a number of articles already published. No doubt further solutions will be forthcoming and will be widely divergent. They are likely to range from the notion that atomic weapons are merely a natural extension of conventional support weapons to be taken in our stride, just as a tactical air force has come to be accepted as a normal means of support, to the opposite extreme view that atomic weapons will change the nature of the battlefield and lead to a pushbutton war.

I believe that the results of careful and deliberate study which is going on at present will find a solution which will not be extreme, but which will indicate the need for changes in organization and methods, both in tactics and administration, and which will probably lay new and greater emphasis on some of the well-established factors and principles. We should not expect changes in principles because, if they are true principles, they are not likely to alter. It is the changes in methods and in the possible changes of emphasis on the several factors which contribute to success in battle in which we will find the most profitable field of study.

Types of Weapons

The physical effects of atomic weapons are now well known. Most of the details of their effects on men and matériel in a wide range of conditions are well known and may be found in unclassified literature. The most valuable publication to date is *Effects of Atomic Weapons*, produced by the Los Alamos Scientific Laboratory in the United States. Practically all the information on which this article has been based has been drawn from this source. I do not know whether the so-called hydrogen bombs—or more correctly thermonuclear bombs—are likely to be used in the field. Their primary use appears naturally to be for employment against major strategic targets rather than for tactical use. Large ports, vital

industrial areas, beachheads such as the one developed in Operation *Overlord*, major river crossings, and large civilian targets such as big cities seem to be the natural and primary targets for thermonuclear weapons. However, the appearance of thermonuclear weapons on the battlefield is not out of the question.

The use of either type of atomic weapon in the field, and the scale of their availability, will depend quite naturally on the strategic appreciation by the combatant nation. We may assume that each of the likely combatants will have both types of atomic weapons available in finite but considerable numbers. It seems probable that superiority in numbers of atomic weapons may be the allies' only initial advantage. Naturally, strategic targets, which may be attacked by long-range bombers or guided missiles, or possibly by seaborne weapons, will have first call on a nation's atomic potential. If the supply of either of both types of weapon can be extended to provide for their tactical use, the scale of provision for use in the field will be determined by an appreciation designed to obtain the maximum effectiveness of the total supply of atomic weapons. For example, if in the last war high explosive were in critically short supply, it would be quite a nice problem to decide whether the greatest effectiveness were to be achieved by putting it into 10-ton bombers to demolish cities, or by using it in large numbers of shells in the field, or to determine what combination of the two would produce the optimum solution. From such a consideration it seems reasonable to suppose that atomic weapons will be available for field use and that the scale of provision will, at least in the early stages of a war, be somewhat limited.

For the purpose of the present discussion the case is built on fission weapons, although the possibility of the use of thermonuclear weapons must not be excluded. Two considerations point to the possibility of more liberal use of thermonuclear bombs.

1. They are now, I believe, much simpler and compact in construction.

2. The development of a fusion bomb which does not require uranium or plutonium as a primer should always be regarded as technically feasible.

Initially, let us concentrate on the weapons which we now expect to find in the field, but be conscious of the fact that we have limited the scope of the discussion, and remain aware that there are other possibilities in the background which, if introduced, will bring changes of a further order of magnitude and a new set of far-reaching implications.

In addition, there is the next regular step in the problem—the extension of our tactical methods to provide for the day when atomic weapons in the field are plentiful.

As a basis for our problem, therefore, and to keep it to manageable proportions, let us start with some reasonable assumptions and apply to some typical situations the well-known physical effects of atomic weapons, and leave the discussion of the problem of tactics in the presence of thermonuclear weapons or of atomic plenty until another day.

As a starting point for our discussions let us begin by assuming:

1. That atomic weapons of energy capacity one-quarter to about four times that of the nominal 20-kiloton bombs will be available in the field in small numbers for a given tactical event on a divisional scale or larger.

2. That these weapons may be delivered by bomb, shell, or guided missile with a degree of accuracy of the same order as that of a heavy gun.

Before trying to evaluate the changes in tactical employment of field forces, let us apply the effects of a nominal 20-kiloton bomb to a reasonably typical divisional area.

Let us examine three cases:

1. The worst extreme—with all troops and equipment in the open.

2. The best case—all troops under cover, with 18 inches or more of headcover and equipment and vehicles dug in as far as would be practicable.

3. An intermediate case—say 4-foot trenches for all personnel but no overhead cover except in command posts and with vehicles and weapons only partly dug in.

Now let us study the divisional picture under these conditions and see what results might be expected from one nominal bomb. The area is shaded to show the regions in which a ground zero may be located with the result that the explosion would effectively destroy the tactical effectiveness of one or more major units.

From an examination of the effects in the worst case, shown in Figure 1, it is clear that one or two nominal bombs suitably placed could effectively destroy the defensive position. For example, a bomb exploding over a ground zero at point "A" would eliminate the four battalions as shown in Figure 1, while one with ground zero at point "B" would eliminate the three units indicated. In this case the large area of destruction is predominantly due to the flash of thermal radiation.

Now let us turn to the other extreme where everyone is provided with at least 18 inches of overhead cover, and there has been some warning of the approach of the weapon, so that everyone has had the opportunity of availing himself of the protection available. In this case, shown in Figure 2, the effect of heat is practically eliminated, unless troops are unlucky enough to be trapped in burning buildings or in the forest and suffer secondary effects of heat radiation.

The primary effects of blast would produce few casualties but the secondary effects of blast are quite unpredictable; injuries are likely to be caused by flying debris, or by collapse of overhead cover, rather than by the direct effect of blast on the body. The major causes of casualties in this case will be radiation with some casualties caused by the secondary effects of blast. An examination of the percentage of casualties to be expected from all causes, as a function of distance from ground zero, shows how considerably the danger area has been reduced.

The interesting feature of the comparison between these two cases is the fact that whereas the most effective positions for ground zero in the first case were near the center of mass of a group of units, in the second case a ground zero needs to be practically inside a unit's perimeter for the weapon to be completely effective.

These are the worst and the best cases, and neither is likely to be realized in the majority of situations. An intermediate case is shown in Figure 3, where everyone has the opportunity of being 4 feet below the surface of the ground, but without overhead cover. It has been assumed that everyone is making the best use of his cover, although not all will be protected from direct line of sight to the point of burst.

In this case there will be a wide range of casualty incidence, depending as it does on the length of straight portions of trench, the orientation of the trench with respect to ground zero, and the exact height of the point of burst above ground level, as well as each man's position in the trench at the time of burst. The casualty estimate has been based on the expected or mean values of the probability distribution. A fairly wide range of better or worse cases must be expected, depending on the true distribution of the several factors which influence the result.

It is mentioned that physical features of ground will not have much shielding effect, as 2,000 feet—the optimum height of burst for a nominal bomb—subtends

37.5 degrees at 880 yards. The presence of timber, however, presents a serious hazard, as it will greatly increase the risk of injuries from the secondary effects of blast—flying branches and debris—up to 2,500 yards or more from ground zero.

The actual incidence of casualties will vary considerably, depending, as it does in the case of atomic weapons, on the detailed position and attitude of each man during the 2 seconds which largely determine his fate.

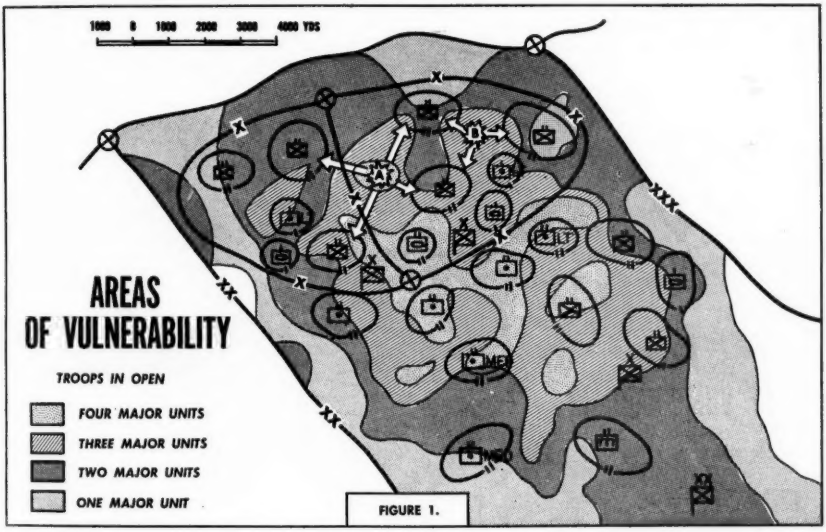


FIGURE 1.

Tactical Consequences

The important result from the tactical point of view is the effectiveness of the unit after the explosion. I hesitate to give an estimate of the threshold casualty rate, but consider that if a unit sustains 25 percent of its number killed, or injured so seriously that they require immediate evacuation, with a proportionate number liable to suffer delayed effects, or with immediate but less severe effects, then that unit's fighting effectiveness is set at zero.

It is neither a new nor a surprising result that overhead protection makes a very material contribution to the safety of troops in the presence of an atomic threat. The principle is well appreciated; the degree of protection may not have been quite as obvious. When troops are exposed, it does not appear to matter quite so materially how they are arranged on the ground in units and subunits; the effect is much the same, as shown by the large areas of vulnerability in Figure 1. Not all troops can expect the same degree of overhead cover at all times. The artillery units will be particularly vulnerable when the guns are manned. The results can be minimized by even a few seconds' warning of the approach of an atomic weapon, provided that each man has nearby some form of defensive preparation with overhead protection. Inevitably, some men will be caught in the open, but the importance of early warning and the provision of the best available protection generally cannot be overemphasized. The problem of early warning of an atomic threat, which

may include shells, is indeed a serious one.

The second and third situations show that even with the best form of protection likely to be achieved, there will very likely be at least one major unit virtually destroyed with each accurately delivered atomic weapon.

Now if there are a strictly limited total number of men available, we cannot afford to maintain a balanced disposition simply by stacking in more units. Neither can we go too far in the direction of distributing the same manpower over the ground in smaller groups, because we must still maintain the maximum effectiveness in the conventional battle.

I suggest that we need to look for the optimum arrangement with a larger number of self-contained organic units within a formation. From a study of the effects of the atomic threat alone, I should say that the smaller each unit can be made the better the result will be. Balancing this against the conflicting consideration of strength in the conventional battle, I should think that the optimum will be reached by determining the maximum workable number of the smallest practicable self-contained, mutually supporting organic units possible within a formation. Moreover, the unit so determined must represent the optimum solution and the one most suitable for all phases of war.

I am not going to be rash enough to propose a blueprint for this new streamlined army. If the result is based primarily on technical considerations, I suggest that it will require a very material alteration in the organization of the field force as we know it. Possible solutions may include the reduction in size of the infantry battalion, with a greater proportion of automatic weapons and an improvement in its own support weapons to make up for loss of manpower by increased firepower. This should not be regarded as an easy solution as each new automatic weapon means an increase in the administrative "tail." We will probably be obliged to seek means of increasing firepower and to find drastic methods

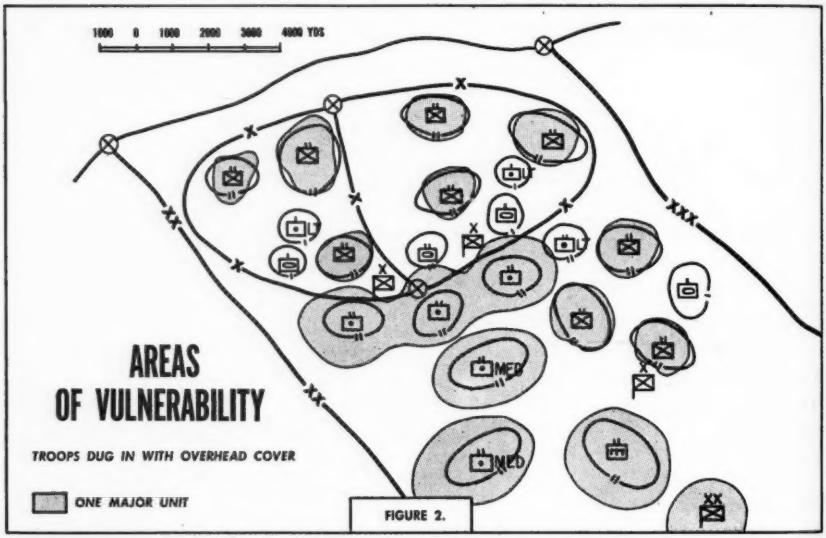


FIGURE 2.

of reducing the administrative load which is already great. As it is now possible to destroy completely the effectiveness of a major unit in a matter of seconds, it becomes apparent that, in siting units on the ground, it will be necessary to think in terms of more than three units as the tactical group, and to site them in sets of more than three. It is clear that it is not possible to arrange a group of three positions in such a way that when any one is removed, the other two may present a balanced organization. In order to achieve this result, at least four and preferably more should be grouped. As grouping means coordination of mutual defense, including the fire plan, the group should be under a single command.

Now there is a limit to the number of subordinate units which a headquarters can command, control, and administer. An optimum number of units should, therefore, be determined, greater than three but not too numerous to be manageable. Whatever the formation next above the battalion should be, it is suggested that it contain not less than five battalions, so that balance can be maintained despite the loss of one or possibly two complete units.

It is normal for a commander to have at his disposal a mobile force which may be launched in a deliberate counterattack when the momentum of the enemy's attack has been lost. It is an advantage to have this force reasonably concentrated and, of course, usually above ground. Such a force would make an attractive atomic target, so that it will be necessary to keep it either protected by overhead cover or dispersed. Dispersion would appear to be the more feasible alternative, so that the problem then is to achieve the desired degree of dispersion up to the time of launching the counterattack and then to concentrate rapidly just before the delivery of the attack. This will call for very careful coordination and rehearsal, a high degree of control and leadership at all levels, and an efficient communication system.

If we set aside for the present the possibility of the use of megaton class weap-

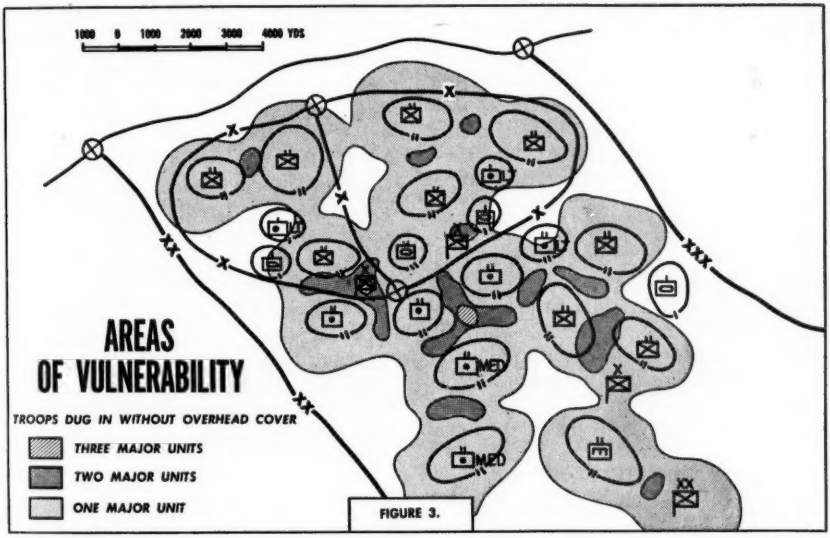


FIGURE 3.

ons, it would appear that the best size of an atomic weapon to use in the field would be one which, delivered with a given degree of accuracy, could cover one major unit in a well-prepared position with its zone of total destruction. If it were larger than this, but not sufficiently large to cover two units, the additional energy would be wasted. Within this maximum limit, an optimum size will be found so that the greatest tactical effectiveness may be achieved from the use of limited resources of fissionable material and of the means of delivering the weapons in the field. An approximate estimate of this value indicates that the most effective practical size is about 5 to 10 kilotons—a quarter to half the size of a nominal bomb.

If thermonuclear weapons were available at a total cost of production and delivery of not more than a few times that of a fission bomb, it would be an economical proposition to use them in the field, because the thermonuclear vulnerability pattern would probably be worse against prepared positions than the one for fission weapons used against troops in the open.

Artillery Problem

As I see it the artillery problem is made worse than ever. Already we are likely to be outnumbered and outranged by enemy artillery. In order to fulfill our task of providing shells on the ground where and when they are required and the complementary task of preventing the enemy from doing the same to us, we are compelled to push guns farther forward and closer together than they should be.

We will probably still have to accept the loss of one major unit with each atomic weapon directed at it, as in most situations there are simply not enough battery positions to site our artillery by batteries so arranged that no single explosion will take out more than one battery. In any case, with the limited range of our present equipment, our guns would be out of range, and unable to carry out the counterbattery requirement, quite apart from the certain disability of being unable to provide the depth and density of covering fire where it is required. The medium and heavy guns will, therefore, have to be put farther forward than we would like them.

I do not expect to find the need for drastic reorganization of the artillery. We may find it an advantage to have slightly smaller regiments and more of them, but the problem of limited range and difficulty of finding enough gun positions puts a severe restriction on changes in artillery organization and employment.

The use of the superheavy atomic guns is a problem in itself. If we look at the converse of our defensive problem, we will see some of the leading considerations. The time factor in atomic support will be vital because in the defense our most profitable targets are likely to be the targets of opportunity, when the attacker is caught concentrated in the open. A glance at Figure 1 will suggest the type of position into which we hope to force the enemy.

We do not know at present the technical considerations which will limit the time factor. I gather that it may take from 15 minutes to 2 hours from the appearance of a target to the delivery of a half nominal 10-kiloton shell over it. It should not be more, and certainly less if we can make it. Control for the launching of atomic weapons on targets of opportunity will, therefore, need to be so delegated that the commander who is best situated to determine the most effective targets should be able to call for the timely delivery of atomic weapons on them.

Protection of the means of launching atomic missiles will be one of the most important local defense problems. Such an attractive prize makes it appear to be one of the most vulnerable points. The

weapons themselves are not able to contribute to their own local protection. Concealment alone will be difficult, but alternative and dummy positions will help. Ground protection should be provided against airborne attacks. The antiaircraft defense of these locations will probably be one of the highest priority antiaircraft tasks. These positions will be few in number, but I suggest that they should ideally be provided on a scale of about 100 percent in excess of the number required to ensure atomic support when it is needed.

The advantage of the defender is that, while he is likely to be well protected, the attacker must at some stage be exposed and, to a certain degree, concentrated. Just how long he may remain concentrated preparatory to an attack will depend upon the speed and accuracy with which an atomic weapon can be delivered after a target is observed. How to achieve the degree of concentration required to ensure success by ground forces against a defensive position without presenting an atomic target is a subject for study in itself.

A suggested list of priority atomic targets from the defender's point of view might be:

1. "Atomic counterbattery" if it is possible to use atomic weapons to knock out those of the enemy, always provided that we have atomic superiority.

2. Targets of opportunity including enemy concentration areas where concentrations of troops in sufficient density are detected, for example at bridgeheads or physical features where he may be forced to concentrate temporarily.

3. Counterbattery fire against his gun areas which are beyond the range of our own heavy guns.

4. Covering an obstacle—atomic weapons should be particularly effective when the attacker is astride an obstacle—provided that our own main lines of resistance are not too close to it. This raises a question of how to locate our main lines of resistance in relation to an obstacle.

5. Enemy headquarters, if accurately located.

6. Targets located in his administrative area.

Although our gun areas are possibly one of our most vulnerable spots, this does not apply in the same degree to the enemy. This is principally so because, with his superior range, he can stand farther back, as he probably will, to be outside the range of our counterbattery fire. In addition, the greater range of his guns permits a higher degree of dispersion and, as he is believed to give less attention to counterbattery than we do, he is less constrained to deploy his artillery forward.

The need for good observation of the enemy's position is paramount. With the imminence of very long-range and accurate weapons in the field, the early detection of atomically attractive targets and the prompt delivery of a missile on them is vital. This range could be as great as 50 miles for a ground-launched weapon. Conversely, it is equally important to deny to the enemy observation of temporary concentrations or appearance of vulnerable points in our own area. Concealment and deception will be more important than ever.

There would appear to be a vital necessity to study the atomic implications of every proposed tactical move. The problems will include:

1. An assessment of the vulnerability of each part of our field force at any stage of the battle, and steps which may be taken to reduce this vulnerability.

2. The choice of atomic targets and the allocation of priorities.

3. The most efficient use of limited resources to gain the greatest effect from the atomic fire plan.

4. The detection, marking, and assessment of any radioactive areas.

5. Casualty forecasts and provision of advice on special arrangements necessary for evacuation of casualties and provision of reinforcements.

A properly trained scientific staff should be provided at each formation headquarters. Whether this staff is to be a small central group to advise on all implications of the atomic problem or whether there should be a scientific officer in each of the existing branches of the staff to advise the staff on atomic aspects of their specific problems is a debatable matter. As there are unique problems confronting each branch of the staff as well as each arm and service, I believe that the most effective method of providing this service is to have a small group—probably one or two at division with slightly larger groups at higher formations—to advise the commander and his staff on all aspects of the atomic problem. Such a group would not only maintain a close scrutiny of the possible effect of atomic weapons on the current position, on which they would work in close cooperation with the operations staff, but they would act as an information center on every aspect of atomic problems.

Camouflage

It will be at least as important in the atomic as in the conventional battle to practice camouflage and deception. It will be particularly important if well-prepared positions are possible, especially if enemy weapons are likely to be aimed with a high degree of accuracy, as in this case it could make the difference between the effects of aimed and random fire, with the benefits to the defender which are illustrated by a study of Figure 2.

There is likely to be a considerably increased necessity for greater mobility and greater speed of movement, in concentration and dispersion, with a consequent need for a high standard of control and efficient leadership at all levels of a command. The rapid reorganization of a unit after an atomic explosion may make the difference between an effective resistance and a debacle.

There are two important new factors which are introduced by the presence of atomic weapons.

First, there will very likely be large numbers of delayed casualties among troops protected by armor or overhead cover from the effects of heat and blast. They may be comparatively unaffected, apart from the effects of shock, for some time after the explosion, but may be aware of the fact that they will in time become casualties from the effects of radiation. Just what the effect of this condition will have on the men themselves and on those nearby who may have escaped a dangerous dose of radiation is difficult to predict. There appears to be a moral issue involved in that, if immediate evacuation will enhance a man's chances of survival, he should not be required to continue fighting. Conversely, the moral fiber of those who have not had a dangerous dose, but think they have, will be severely tested. This new prospect demands a high standard of training and morale.

Second, there is the practical certainty that, virtually instantaneously, large numbers of men in a unit will become casualties while the remainder are almost unaffected. The level of incidence of casualties which a unit can suffer and still remain an effective force will also depend critically on the quality, including morale and leadership, of the men in that unit.

For a time, too, there will be a natural fear of the unknown, when nobody will know where or when an atomic explosion might occur, nor what to expect when it does occur. The development of passive defense measures, including an efficient warning system and experience in combat, will go a long way toward solving this problem.

Conclusion

In the absence of experience in atomic combat, most of our preparation has to be based on predictions and on theoretical estimates.

The size and number of weapons employed will have a critical effect on the organization and employment of a field force. As the introduction of fission weapons, even in limited numbers, will have a considerable effect on military operations, there appears to be a prima-facie case for a review of the organization and employment of a field force to find the optimum solution which will be most effective in both the atomic and the conventional situations.

The best use of cover, concealment, and deception in a defensive situation is vital; in other phases of war, dispersion will be of primary importance.

The introduction of atomic weapons brings with it a fresh set of problems to determine the best methods of their control and employment. It is essential that the atomic aspect of all tactical problems should be examined and atomic advisors should be available at each formation.

There is an even greater need for a high standard of command, control, leadership, and morale at all levels of command.

Experience cannot be accumulated gradually as has been possible in the past; it will be imperative to examine tactical doctrine for all phases of war to find the best means of turning the advent of atomic weapons of all types to our own advantage. This appears to be the most important contribution which research can make at the present time, because upon the atomic factor alone could well depend our very survival in a future major conflict.

Fighting Formations of the Future

Digested by the MILITARY REVIEW from an article by Major A. F. J. G. Jackson in the "Journal of the Royal United Service Institution" (Great Britain) May 1955.

THE arrival of tactical atomic weapons is going to cause some radical changes in the organization of fighting formations.

One group talks of a division with a four-battalion front, with three or four battalions in reserve. This at once argues a conception of linear defense with divisions neatly drawn up side by side. Such conceptions are dead. Even if the forces were available, atomic weapons forbid such concentrations of men in vehicles. The tactical use of atomic weapons must lead to greater mobility and, therefore, flexibility in units and formations. Any argument about "threes," "fours," or "fives" in formations inevitably leads to "sixes and sevens" and is sterile. There is only one way to design a tool and that is to decide what it will be asked to do. In designing the fighting formations of the future one must consider the tactics and strategy which the characteristics of the new weapons will force on commanders. Atomic explosive can be delivered in bombs from aircraft, in the warheads of pilotless aircraft or rockets, and in shells from cannon.

Characteristics

The general characteristics of atomic explosives are too horribly familiar to need restating in detail, but it is worthwhile dwelling on certain advantages and disadvantages which are common to all forms of atomic weapons. There is little to be gained from expressing the effect of atom bombs in terms of tons of TNT when used in shells. To do so misses the point of the greatest advantage of an atomic explosion which is its speed and thoroughness. Used on a battlefield one can say that in a second of time at 4,000 yards from the point of impact no men or unarmored

vehicles will be left capable of fighting as an organized force unless they have had the opportunity of fortifying their position very strongly. Even troops in slit trenches can expect casualties up to 1,500 yards. The equivalent amount of TNT would take many hours to deliver by any means and its effect would be unevenly spread over the target.

There seem to be three outstanding disadvantages possessed by all atomic weapons. The greatest is the expense of production in terms of industrial effort and money. It is difficult to give any figures, but the amount spent annually by the United States and ourselves on research and production puts these weapons in a class by themselves. Therefore, it follows that they will not lightly be used on the battlefield. Further restraint on their use will be the fear that the damage they do may impede our own forces and the desire not to waste them on uneconomic targets resulting from poor information.

Theater of War

Anyone can see that atomic weapons mean more dispersion, but to arrive at our future organization we must find out what that really means. The best way is to strike out various forms of high concentrations of men and vehicles now known to us.

Beginning in the rear areas, one sees immediately that the day of the large single base such as Antwerp in 1945, or Tel-el-Kebir, is over. Corps maintenance areas and divisional administrative areas offer far too valuable targets. Nearer the front, large columns of vehicles and too much reliance on roads are dangerous. Divisions concentrating to cross rivers or lines of departure will do so at their peril. Never again will three armored divisions concentrate for so long as they did for Operation *Goodwood* in Normandy on 18 July 1944. Artillery will never again form up as it did before El Alamein, nor can one visualize the concentration of aircraft and gliders, which were collected to carry Major General Wingate's second Chindit expedition into North Burma in 1944, happening again. Aircraft and landing craft carrying troops to battle will only be able to concentrate for short periods at the point of delivery.

This rapid review shows quite clearly how the entire organization of an army from front to rear will be affected. Large concentrations of men or matériel must be broken up into packets small enough not to offer worthwhile atomic targets. At the same time it will be as necessary as ever before to concentrate when strategy or tactics demand it. These apparently contradictory requirements can only be reconciled by producing fighting formations which can move rapidly at short notice. To do this they must be shorn of every vehicle or item of equipment which is not essential to their functions. A reduction of vehicles and stores will not only increase mobility, it will also lessen the problems of hiding units from the air and reduce the matériel to be hidden in the depots and parks to the rear. If the remaining vehicles are designed with a good cross-country performance, mobility will be increased still further, thus making unlikely those heavily congested roads which every ground attack pilot hopes to find.

It is obviously impracticable here to go into detail when talking of reducing equipment. But to show that it has not been considered lightly it may perhaps be worth giving some examples showing what could be reduced in an infantry battalion. These thoughts are based on the conception of a far greater austerity than was acceptable in the last war. There will only be space on transport for reserve ammunition, gasoline, and food. Even these must be reduced from the present scale. The soldier's daily ration must be produced so that he can easily

carry and cook it himself. Self-heating tinned foods made their appearance during World War II. Individual cooking will do away with the cooks and officers' mess trucks immediately. Evacuation of wounded by helicopter from forward areas could eliminate the doctor and two vehicles.

The increase in mobility will be of no value unless accompanied by a remarkable advance in communications. The Royal Corps of Signals must search for reliable radio sets capable of long distance operation but not bulky, sturdy and easy to operate, and not subject to enemy interference.

Defensive Battle

Having considered the effect of atomic weapons in general one can now approach one's conception of the way future battles will be fought. The aim of all commanders will be to force their enemies to concentrate sufficient forces to constitute an atomic target, while at the same time not offering one themselves. Here one must issue a word of warning. There will be many occasions when some other means has to be used to destroy the enemy. For political, economic, and strategic reasons atomic weapons may be unsuitable.

Before one can go any further one must try to establish what constitutes a worthwhile atomic target. Remembering the area of destruction against dug in troops, a circle of 1,500 yards radius, and the thoroughness of its destructive powers, one must conclude that a brigade locality defended by present-day small-arms weapons could be effectively neutralized by one atomic missile. If that brigade is defending an important bridge or communication center, its destruction will deprive the enemy of the fruits of victory as well as impeding his advance still further. Nor will it generally be possible for the enemy to locate and delineate precisely the brigade position and, therefore, the chances are that part of the missile's effect will be wasted. As indicated already, no one can afford to use atomic explosives on anything except major targets because of their great cost. A divisional locality defended by present-day small arms is much harder to miss and a hit anywhere is likely either to destroy its headquarters and reserves or to tear a great hole in its defense. One can, therefore, assume that a brigade will very seldom provide a sufficiently tempting target, but a division will. It will, however, still need at least a division to reduce a brigade with conventional weapons if the brigade is properly dug in.

Having decided that a brigade, particularly if it is defending an area of value to the enemy, is not an atomic target but that a division is, it follows that there must be a minimum distance that one brigade can be placed from another. This is assuming that it will be desirable to use atomic weapons against large bodies of enemy trying to infiltrate between defended localities.

Although it should be possible for troops to dig in under most circumstances, it is seldom feasible for tanks or vehicles to be given similar protection. In the open, tanks need to be 2,000 yards from ground zero and battened down to escape damage. Trucks require at least 2,500 yards. Therefore, the minimum distance between brigade localities must be 5,000 yards. It is essential here to say that this figure is only introduced to show the nature of the problem. The tactical nature of the ground to be defended will decide the size of the gap, but the defense will be handicapped in its use of atomic weapons and liable to heavier casualties if a smaller gap is accepted.

The pattern of the defensive battle now begins to emerge. The ground will be held by infantry brigade groups holding important communication centers, defiles, and main river crossings, or any area the possession of which by the enemy will considerably help his advance. The greater

the depth of this belt of fortresses, the better, and the more natural obstacle lines, rivers, mountain ranges, or forests that run at right angles to the enemy's thrust, the more economical use may be made of the troops available.

The advancing enemy risks destruction by atomic attack if he is foolish enough to concentrate a division or more to remove the brigade in his path, provided this concentration takes place more than 1.5 miles from our own troops. If he succeeds in launching an attack within this safety limit, then he must himself be attacked by our armored forces which have lain in wait on the flank. Since they form the mobile element essential to his destruction, the enemy will spend a great deal of time and effort locating and then atomic bombing these armored forces. Therefore, they must carefully choose their hiding places and must be ready to use deception at every stage. A move every night may become a drill for armored units. Here again a brigade is probably the biggest acceptable concentration until the moment comes for attack. The concentration for attack is not difficult. It requires the evolution of a staff technique similar to that used by the Bomber Command in 1,000 aircraft saturation raids over Berlin in World War II, in order to coordinate the arrival of the formations involved.

Even when it has been possible to use an atomic weapon on the attacking enemy, our armored forces will have to follow up to destroy survivors in case the bomb has not been fully successful.

The Offensive Battle

The offensive battle is conceived as being the final effort that wins the war. The industrial and economic cost will prohibit such an effort being repeated. Before it is launched the air battle must have been won and the enemy's matériel support weakened by atomic destruction of his key industries. It will be a pity if the strategic background to this great climax should be anything but the oblique strategy which has stood the British in good stead so often in the past. Provided that sufficient atomic missiles are available and the entire army can go forward on cross-country vehicles, it will, of course, be possible to bulldoze a path through the enemy's defensive belt of fortresses, but at a terrible political as well as matériel cost. A head-on attack must be avoided unless accompanied by a diversion which will effectively make the enemy look over his shoulder and divide his forces. Such a diversion might be provided by the use of airborne and air transported forces to establish airheads behind the enemy fortress belt.

Following the principles so far established these will each require a number of landing and dropping zones. Their aim will be to control a large piece of territory across the enemy's communications. If an airhead can be set up within reach of a sea flank attainable by the Navy, reinforcements and supplies can come by sea provided a stretch of coast has been won which is long enough to enable deliveries to be made at several points. The enemy air force will never be so defeated as to be incapable of attacking highly vulnerable and worthwhile targets, such as a mass of shipping provides.

These airheads must be supplied in the early stages by air, and if no sea communications are available, must continue to be so supplied until a landline of communications is opened.

While they are being created, an attempt to completely destroy the enemy's armor and atomic artillery by air and tank attack will be in progress. Once this is achieved the only obstacles to linking up with the airheads are the enemy fortresses guarding his main routes. These can either be bypassed or attacked with comparative impunity by infantry sup-

ported by armor. Bypassing is preferable since the airheads must be reached quickly, but it requires infantry to be carried in cross-country vehicles and the provision of prefabricated bridging materials which can quickly and easily be brought forward and placed in position. One sees helicopters providing much assistance in the rapid construction of these bridges by dragging one end across the gap.

However, there are bound to be fortresses which cannot be bypassed and preparations must be made for their reduction. If the diversion has been well planned and launched, the morale of the troops holding these fortresses will probably be poor, particularly if our light armored vehicles ranging deep into enemy territory have prevented supplies reaching them. On the other hand, they may realize that on their staunch defense rests the result of the war. Therefore, there must always be available highly mobile siege trains of specialized armored vehicles to breach minefields and wire obstacles and to destroy defense works. These siege trains will be in great demand, and on their availability and speed of movement will depend the continuing momentum of the advance. As one fortress after another is reduced or bypassed so will the enemy's resistance crumble. As our surface thrusts continue, the transport aircraft will be carrying supplies and reinforcements to the airheads. Thus the enemy will be made to face both ways and divide his forces. In such a manner can one see the old arts of strategy being applied in new ways.

Organization

The Infantry Battalion.—This new type of warfare is going to have certain very clear effects on the infantry battalion and its establishment, and, although it is not strictly a formation, these effects must be touched on because the organization of formations will depend so much on the assistance the infantry will require. In defense, it must expect to hold bigger areas and be capable of rapid movement, deployment, and occupation of defensive positions. In the attack, it must be capable of rapid movement in armored personnel carriers (APCs). Controlled by radioed orders it must deploy and move into the attack while in motion. It must be able at all times to move completely by air —a cold as well as a hot war requirement.

These "musts" lead one to the conclusion that methods of deployment and movement are too slow, mainly because there are too many vehicles, supporting weapons, and items of supplies. Deployment can be streamlined by having supporting fire provided by other arms and doing away with battalion support weapons, thus cutting out the lengthy and ponderous regrouping at present so often found necessary within the battalion.

The four rifle companies should consist of four rifle platoons, each of three sections of seven. The fourth rifle platoon is required to give depth to a large company locality. The section of seven is easy to handle and represents a normal wartime figure.

Headquarters company should include an innovation, a scout platoon, replacing the intelligence and sniper sections. These men should be especially trained in observation and reconnaissance work and should also be snipers. With such large areas to cover, and the need for rapid movement in and out of harbor areas, theirs will be a very important responsibility and they must be boldly used.

The Infantry Brigade.—The infantry brigade will hold defensive pivots about which the armor can maneuver, and in attack will be responsible for the investment of and assault on enemy fortresses. Its main requirements will be control of its own artillery, its own reconnaissance force, and a substantial counterattack force.

Every brigadier will feel isolated and cut off in defense. Therefore, he must be

given the means to see, and keep contact with, his neighbors. This requires an armored car squadron in each brigade. One would like to see a regiment, but the Army could not provide that amount of cavalry. Its importance will be realized when one thinks of the enemy's inevitable attempts at infiltration, and the higher commander who cannot use his atomic weapons until the enemy's concentrations have been accurately discovered.

As the brigade will be holding such a large area its own counterattacks must be powerful. This necessitates a fourth battalion.

The task of antitank defense requires mobile weapons which can concentrate in superior force against the tank threat. It follows that each brigade will need a squadron of armored tank destroyers. The present heavy gun tank has obvious disadvantages for this role, the main one being that it cannot travel by air. In the offensive stage of a future war airheads will be vulnerable to armor and so the tank destroyer must be air transportable.

An engineer squadron completes this impressive command. Its tasks will be the improvement of local obstacles, laying of minefields, and assistance in the making of defense works.

The Armored Brigade.—The armored brigade must be compact and capable of local self-protection, and must provide its own reconnaissance. It does not require any artillery for itself since it has its tank guns and can rely on the artillery with the infantry brigades to support it when engaging the enemy. A brigade composed of only two armored regiments, an infantry battalion carried in APCs, and an armored car squadron seems to meet all the requirements.

The Engineer Brigade.—The need for a siege train of specialized armor in the attack has been shown, but there will be just as important engineer tasks in defense. Obstacles will have to be made more impassable with demolitions, craters, and mines. The wreckage caused by atom bombs must be removed from main arteries. All this must be done in the open, so engineers will need armored vehicles and must be constantly ready to defend themselves.

The Division.—So far this article has dealt solely with the brigade which appears to be the most convenient tactical formation. It has been shown that actions will be fought using a combination of infantry and armored brigades. These combinations are likely to vary on each occasion. It would, therefore, seem that there is no point in any rigid organization of a number of brigades into divisions, since regrouping would constantly be required to produce the right force for a particular operation. It is this regrouping which clogs roads and makes movement so slow at present.

The divisional headquarters of today is too immobile and too easily found and destroyed from the air. Most of the fighting divisional troops, as has been shown, will have been dispersed to brigades. The administrative units will also be dispersed farther back. The headquarters remains. It has a task: strategical preparation for, and tactical control in, battle. Stripped of the divisional troops and its administrative responsibilities, it becomes very small indeed, which is ideal since it can easily flit from place to place unobserved. It is suggested that it be redesigned on the analogy of present corps headquarters to control from one to a number of brigades of any kind as the situation requires. The commander will need excellent signals, a predominantly general and intelligence staff, and a number of highly trained liaison officers. His administrative staff will only consist of a small planning cell whose task will be the anticipation of future demands by skillfully studying the battle. The importance of the divisional commander not being bowed down with ad-

ministrative worries cannot be too heavily stressed.

Corps and Army Headquarters.—Army headquarters remain responsible for strategic direction which includes the preparation of demolition and deception plans and the allocation of brigades to divisions. Army headquarters will also have control of atomic missiles and engineer brigades. With its affiliated air headquarters it will coordinate the use of air support.

Each army area should be divided into several corps areas. A corps headquarters should be given the task of controlling the administration of all formations. It will thus command all administrative troops in its area. This is a logical development since all administrative dumps must be scattered over such a wide area that control by lower formations would lead to chaos. Corps can keep in touch with the administrative situation through its cells at divisional headquarters and by being kept constantly aware of the army commander's intentions.

At the beginning of this article some idea of future administrative difficulties was given. These become greater the more one studies the way battles will probably be fought. They can be summarized as threats from the air and infiltrating light armor to installations and supply columns. The remedy for the threat to installations would seem to be the use of many ports, and some *Mulberries* (floating movable ports) supplying a great number of small dumps each containing a complete range of supplies and stores. The delivery of these supplies to forward troops by helicopter or air transport appears to overcome the dangers of ground attack. Unfortunately, however, in the early stages of war the air situation may not allow these methods to be used except in emergency. Just as sea transport will never be completely superseded by air, so a large part of the army's supplies must continue to travel on land. To do this with any safety the Royal Army Service Corps (RASC) needs to become a fighting arm, driving small convoys of armored load-carrying vehicles protected by tanks from their dumps across country to brigade fortresses. On the way they may have to fight predatory enemy armor or, if the force is too big, scatter and rally at an agreed rendezvous. With these convoys will go the Royal Electrical and Mechanical Engineers detachments to recover and repair damaged vehicles. The evacuation of wounded is essentially a task for helicopters which can deliver them direct to base hospitals.

This new administrative idea will require the working out of many new staff techniques. For instance, in all atomic matters, brigades must deal direct with army or theater headquarters. The communication problems are immense but they must be faced, and soon.

Conclusions

When reading this article, one may perhaps be struck by the analogy to naval warfare, the need to destroy the enemy's fleet—his armor and air force—before assuming the offensive; the convoys of supply ships—RASC vehicles—moving from port to port in danger from enemy submarines—light armor. It is an interesting idea for it shows the inevitable truths of strategy. It results from the immense areas over which battles will be fought.

No one wants atomic war, but one may be forgiven for hoping that the vastness of the problems raised by these new weapons will give the services a new lease on life. They offer a challenge to produce new ideas, new methods, new techniques, and new systems of training. Above all they require young fresh minds in our commanders. Societies usually refresh themselves and take on new vigor with the free flow of original ideas. There are many who think such a flow is overdue in the services today.

The Importance of the Chinese Railway System

Digested by the MILITARY REVIEW from an article by
Major I. Hardie in "The Royal Engineers Journal" (Great Britain) June 1955.

THE object of this article is to consider the significance of the part played by the Chinese railway system in the events which have occurred in the Far East and Southeast Asia between 1949, when Mao Tse-tung established himself as ruler of China, and the signing of the agreement on Indochina in Geneva this year.

The most important event during this period is undoubtedly the rise of China to the status of a world power.

Since China is not yet a maritime power, the Chinese railway system has peculiar significance with regard to the situation in the Far East and Southeast Asia, and much may be learned from a close examination of this aspect of the country's economy. It is by far the most important transport agency in China and the economic expansion and strategic aims of that country must be largely dependent upon it.

Geographically, the system can be divided into three parts (see map page 99).

Manchuria.—This is the most modern and efficient part of the entire network. It is also the most dense part and has alternative routes between most of the important places. It serves the Manchurian industrial complex and interconnects the Soviet Union, North Korea, and China proper. The backbone of the Manchurian Railway is formed by those lines formerly known as the Changchun Railway. Until the end of 1952 the Changchun Railway was under joint Sino-Soviet control. On 31 December 1952 it came under full Chinese control and was renamed the Harbin Railway Administration. They are the line which connects Manchouli, via Harbin, with Suifenho and the line from Harbin to Dairen and Port Arthur. Manchouli and Suifenho are the only points at which the Chinese and Soviet railway systems meet and hence the line connecting these two points is of great strategic and economic importance to China. It is also important to the Soviet Union since it forms a short alternative to the Trans-Siberian Railway, although it must be remembered that the Chinese gauge differs from the Soviet and it is necessary to transload at the border.

There are several rail connections between Manchuria and North Korea but only one between Manchuria and China proper. This latter line follows a strategically vulnerable route along the Gulf of Chihli and is the only rail link between China proper and the Manchurian and Soviet industrial complexes. Its strategic and economic importance is obvious.

China North of the Yangtze.—Here is a very sparse network consisting of two north-south trunk routes with only three lateral connections. There is also an important but isolated line connecting Chungking with Chengtu.

This part of the Chinese railway system serves the new area of industrial expansion in West and Northwest China and contains most of the important railway projects. The two north-south trunk routes are the main lines of communication for movement from industrial Manchuria and the Soviet Union toward Southeast Asia and Hong Kong.

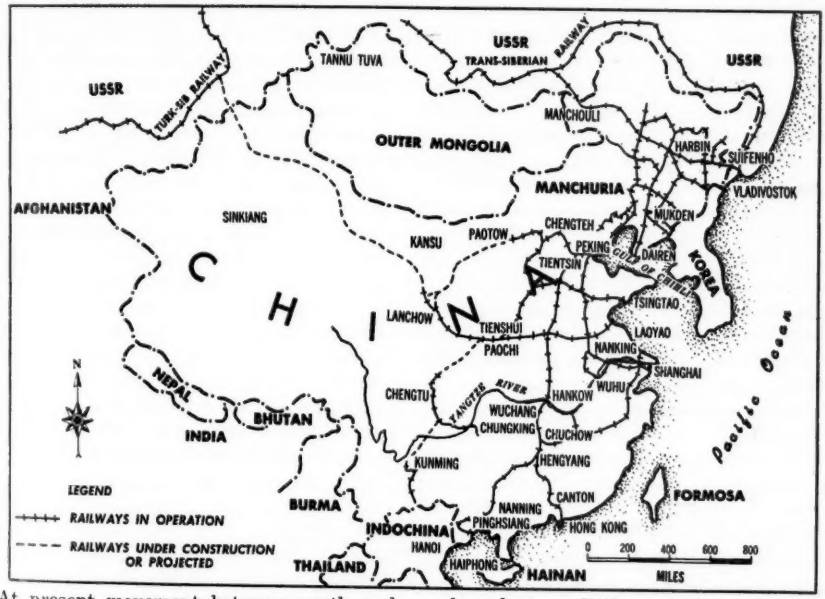
The lack of alternative routes makes this part of the system particularly vulnerable, but it is nevertheless of great strategic and economic importance.

China South of the Yangtze.—This is an even sparser network than that north of the Yangtze. It contains four main lines which form a letter "K." The two northern points are at Wuchang and Nanking from both of which lines run to Chuchow. From Chuchow there is a rail bottleneck south

to Hengyang, from which point one line runs to Pinghsiang, near the Indochina border, and another to Canton.

There is also an isolated meter gauge line serving Kunming and the mining area to the southeast.

The strategic importance of the network south of the Yangtze has been greatly increased by the move of the military center of gravity from Korea to Southeast Asia.



At present movement between north and south China, including the redeployment of locomotives and rolling stock, is hampered by the fact that there are no rail bridges over the Yangtze and everything must be ferried at Nanking or Hankow.

By the end of the Sino-Japanese and subsequent civil war a large part of the railway system of China proper was out of action. The Manchurian system did not suffer so badly, but the industrial rape of Manchuria carried out by the Soviet Union immediately after the war must have seriously affected the productive capacity of the railway industry. This may since have been made good, to some extent, but it is likely that there is still a shortage of locomotives and rolling stock.

In 1949 the Communist regime realized the important part that the railways would play in the rehabilitation of the country and subsequent economic expansion and devoted every effort to the rapid restoration of the system. Technical help and perhaps a little material help were supplied by the Soviets and some United Nations Relief and Rehabilitation Administration (UNRRA) supplies may have come into Chinese Communist possession, but there must, nevertheless, have been a severe shortage of locomotives, rolling stock, rails, bridging steel, signal and telegraph equipment, and almost everything other than unskilled labor. It can be deduced from the speed with which several thousand miles of line were brought back into operation that many temporary improvisations were incorported in the work.

It was no doubt intended to improve and consolidate the lines as and when technicians and materials became available, but they could not have been operating as efficiently, nor could their capacity have been as great, as it was under the Japanese.

As soon as the temporary restoration of the major part of the old system was completed, the Chinese Ministry of Railways embarked upon a program of capital constructions. The new lines, as well as being strategically important, are a necessary part of the general program of economic expansion. The pattern of new construction is now becoming clear: the only main line serving the extreme south has been extended from Nanning to the Indochinese border; part of a new northwest-southwest trunk route to connect Paotow in the north with Kunming in the south is under construction and the remainder is scheduled for construction in the near future; the most important lateral line, the Lunghai Railway, has been extended from Tienshui to Lanchow and a new line is being constructed west from Lanchow across Kansu and Sinkiang to connect up with the Soviet Turk-Sib Railway; and a railway and road bridge is under construction across the Yangtze between Hankow and Wuchang.

These are the major projects at present and their strategic significance is that they improve communications with Southeast Asia on one hand and the Soviet Union on the other. In particular the Sinkiang line will form an alternative to the strategically vulnerable Gulf of Chihli line. The Yangtze bridge will speed up any north-south redeployment of troops, supplies, locomotives, and rolling stock that may become necessary in the future. Their economic significance is that they will facilitate the development of oilfields and mineral deposits in Kansu and Sinkiang, and will enable new industrial centers to be established in strategically safer areas in the west of China. Their political significance is that improved communications will facilitate effective political control of the minority peoples of the extreme west by the Chinese Communist Government. Also, since a basic shortage of technicians, aggravated by purges to consolidate communism and eliminate corruption, necessitates acceptance of Soviet help, it follows that there is Soviet influence on the planning level.

The rapidly increasing volume of traffic resulting from industrial expansion, new railway construction, and the need to maintain and improve the original hasty rehabilitation of the railway system, coupled with a shortage of locomotives and rolling stock and inefficiency due to lack of experienced personnel, must have severely strained the Chinese railways. It is probable that the unexpected but prolonged additional load resulting from the Korean conflict caused the strain upon the railways to become critical. The many "emulation" campaigns entailing the overloading of rolling stock and overworking of locomotives are evidence of the difficulties under which the Chinese railways were operating prior to the summer of 1953.

It is unlikely that China could have continued to support the Korean conflict without severely curtailing her own program of economic expansion and the Korean Armistice was, therefore, a necessity. Having ended the fighting in Korea, the next logical step, from the Chinese point of view, was quickly to gain as much success in Indochina as could be achieved without incurring full-scale military intervention by the United Nations. Large-scale intervention by the United Nations, with naval and air superiority, would have been much harder to contain in Indochina than in Korea. There is only one railway line to support Chinese intervention in Indochina, whereas North Korea has five rail links with Manchuria and has direct access to the Soviet Union across the Tu-

men River. In any case, if China could not continue the conflict in Korea, she would not wish to replace it by an equally heavy military commitment in Indochina.

From the strictly military point of view, United Nations intervention prior to the Korean Armistice would have forced China to abandon Indochina or fight on two fronts. In the latter event it is difficult to see how China could have avoided military defeat in one or both of the theaters, unless the Soviet Union had intervened in Korea and enabled her to concentrate against Indochina. Direct Soviet intervention in Korea would presumably have resulted in the expulsion of the Soviet Union from the United Nations and it is doubtful whether China could have redeployed sufficient force from the extreme north to the extreme south—bearing in mind that there is only one rail approach to Indochina south of Nanning and no bridges over the Yangtze east of Hankow—in time to prevent a major United Nations victory in Indochina. Chinese action against Indochina once United Nations forces had reached the Sino-Indochinese border might have resulted in the bombing of Chinese communications and industrial centers. This might have touched off a third world war.

It appears that United Nations intervention in Indochina prior to the Korean Armistice would have faced the Sino-Soviet axis with three alternatives: to abandon Indochina, to start immediate peace negotiations, or to widen the scope of hostilities and risk a third world war.

The advance of communism since World War II has shown that the placing of the Communist powers in the position similar to the one outlined here is a calculated risk which must be taken sooner or later if the spread of communism is to be checked. The later it is taken the greater the risk will become.

At the present time it is unlikely that the Communist powers could win a third world war. Therefore, they are unlikely to risk starting one and it follows that United Nations intervention in Indochina prior to the Korean Armistice would probably have resulted in an immediate Chinese offer of peace negotiations. Such an offer would undoubtedly have been surrounded and obscured by much anti-West propaganda, but the United Nations would have been in a strong position from which to negotiate conditions favorable to the free world. Actually, the Communists have gained control of Northern Vietnam, the Southern Vietnam Government is discredited in the eyes of its supporters and is without authority, the Southern Vietnam Army is no longer an efficient and reliable fighting force, and all of Vietnam is likely to come under Communist control sooner or later.

For the future, it is difficult to suggest how the initiative can be wrested from the Communists if we are to continue fighting them only at times and in places of their choosing. From the military point of view, further serious Communist aggression in Southeast Asia might be countered by unleashing the South Koreans against North Korea with the United Nations in reserve. During the next few years China may be largely occupied in expanding her industries and improving and extending her internal communications.

The above analysis of the situation in the Far East has ignored many factors which affect the situation: public opinion in the United States, Europe, and the free countries of Southeast Asia; the extent of military resources available to the United Nations; the economic implications of intervention in Indochina; and many others. With due allowance for these shortcomings, it is still difficult to avoid reaching the conclusion that, in the Far East, the "West" has received a sharp lesson in the art of political and military strategy. Let us hope that we have learned our lesson well.

Coexistence and a Free World

Translated and digested by the MILITARY REVIEW from an article by Giuseppe Vedovato in "Cuadernos Hispanoamericanos" (Spain) June 1955.

BEFORE delving into the subject of coexistence and a free world, I consider it fitting to insist on a study of the interesting observations that have been formulated on a sociological and juridical plane from the doctrine of coexistence. A study conducted beyond the mere political-diplomatic field and even the doctrinary field, in our opinion, can explain more fully the true nature and intrinsic significance of this commonly used and very popular expression: peaceful coexistence.

In one of his books, Emil Durkheim, the French sociologist, makes a truly suggestive distinction between two solidarity formulas which, following variable proportions, coexist in all human societies: mechanical solidarity or by similarities, and organic solidarity or by work division. The first is the expression of a community of ideas, beliefs, tastes, and customs; the second is based rather on the differences, and is the expression of interdependence. We find the two forms of solidarity strongly operating and fully re-establishing themselves in the internal societies which in reality are the nations. Solidarity by similarities is almost unknown to international society; furthermore, it appears in a generally superficial and very sporadic manner, while a certain amount of organic solidarity has been registered there for quite some time. This fact is of capital importance and impregnated with eventualities, not only because the necessity for international collaboration and the development of peoples' rights can be derived from it, but also because as a result of this organic solidarity in the international order, the conditions for consolidation seem more precarious than they may appear to be in the internal order. It is superfluous to bring out how, in a period of tension such as ours when rivalries become more acute, mutual distrust imprisons our spirits, the shadow of war is constantly hovering over the horizon, doctrines are refuted and policies opposed, the risks entailed by an organic solidarity on an international plane are emphasized, and national counteraction movements are created and spread until organic solidarity is paralyzed or forcibly withdrawn.

National Rivalry

Since World War II, only two great powers, the United States and the Soviet Union, confront one another as leaders on the international scene, holding almost all the material elements constituting the basic strength for a new international equilibrium in the palm of their hands. The two powers, each by its own means, are bent on world domination; both powers, each by its own calculations, are bent on achieving an organic solidarity and by similarities, according to Durkheim's definition. In fact, the present objective no longer consists of simply rectifying boundary limits or definite territories, but clearly aims at attaining absolute supremacy. The control of entire groups of nations is sought. The possibility of being wrong, especially after the Korean episode and the war in Indochina, seems to diminish greatly and one gets the impression that in the West as well as in the East, there is no deviation of purpose: on the part of the United States, with a system which we might define as of collectivity, directed toward the attainment of the full coordination of international collaboration in aims and in actions; on the part of the Soviet Union, with a system which we might define as of singularity, aimed at

obtaining international subjection of the hierarchy. The keen analysis of the Soviet foreign policy effected in the West before, and particularly after, World War II substantiates the fact that the policy is always inspired by the principle of opposing the resolutions of collective agreements, so that the Soviet Union, by means of bilateral treaties, may be in a better position to wield her own power and viewpoint over the other contracting party, and to strongly oppose the union of coastal nations and to maintain governments in the coastal nations which are hostile to these unions, however weak.

Various reasons seem to oppose the fulfillment of this objective through war:

1. The conviction by both powers of the present inability to annihilate the enemy. The war capacity of the United States and the Soviet Union is tremendous, and each appears capable of inflicting great harm on her enemy. While there is no doubt regarding the possibility of both contenders dealing each other staggering blows, neither considers them mortal, and hardly foresees the total destruction of her opponent.

2. The consideration that world wars—and such they must be due to the importance of the protagonists—insofar as the war potential is established on equal terms by the military elements and the civil forces, can only be decisive with the destruction of the combat capacity of the entire nation.

While this new type of international balance of power, or more truthfully "equilibrium of impotency" as defined by an Italian author, may serve to guarantee peace, permitting us to view international problems with certain serenity in spite of unfavorable appearances, it is the basis for all attempts developed by the litigating parties to obtain its modification without resorting to war.

As we know, every human activity is organized on three planes—the economic, the spiritual, and the political. The most necessary to man's needs, from beginning to end, is the economic plane or the one dealing with spiritual communication which, since the days of primitive societies, has been expressed in so many different ways. Adversely, individual participation in politics is not a necessity in the proper sense of the word. The emphasis the political aspect gives to vital manifestations forces the opposing elements inherent in politics to greatly alter economic life through the different forms of self-sufficiency or the struggles in competition that it originates; or spiritual life, through the different forms of direction or of censure that it arouses. Therefore, instead of economics influencing government political decisions, politics becomes the dominating factor of economy. It promotes integrations which frequently do not find any justification in the form of cooperative specializations or as economic complements. What happens is that politics because of the cold war becomes a strategy. The very coexistence of different and even antagonistic governments is accepted. This does not prohibit relations, treaties, or even collaboration of formulas. The term "peaceful coexistence" which is so much in style today has its origin in the proper vocabulary of Marxism. At the end of 1917, just 2 weeks after the Communists had ascended to power, Trotsky declared:

My Government desires a rapid peace based on the principles of an honorable coexistence and of the collaboration of the people.

In 1925, while analyzing the international situation during the XIV Congress of the Communist Party, Stalin declared:

The essential factor in our international relations is a sort of provisional equilibrium of forces which has been established between our country—where so-

cialism is edified—and the countries of the Capitalist world. . . . There is today what might be called a peaceful coexistence between the Soviet countries and the Capitalist countries.

Years later, the situation has not changed greatly. As a result of Stalin's death, the Soviet Government reaffirms the peaceful coexistence thesis in the form of a new situation characterized by the arrival of atomic weapons. Malenkov declared on 26 April 1954:

The Soviet Government continues to believe in the possibility of coexistence between the Capitalist and the Socialist systems, but of competing with one another in the economic field. Convinced of this, we pursue a policy of peace and reinforcement of international cooperation.

In reality, it does not imply a tendency toward more tolerance inasmuch as the problem of coexistence, in theory, continues to be acute and without solution. Dictatorship remains a dictatorship and democracy, a democracy. The form in which the people of the interior are governed has close relationship with its attitude toward an international society.

In the present-day world, a knowledge of the constant factors of foreign politics is no longer sufficient. A new factor, public opinion, is of no less importance than the constant factors, and although essentially mobile, exercises its influence. Its movements complicate the international political problems to a greater extent and hinder the search for solutions.

When speaking of public opinion, we must think in terms of a social reality which presents itself simultaneously as a fact and as a norm; a fact whose existence cannot be doubted, yet is difficult to discover with exactness; a norm which, nevertheless, does not have the character of a positive rule, with authorization in case it does not work. In public enterprises, certain projects are discussed and formulated which stir positive or negative public reactions, and all this process develops independently of the territorial division of collectivity or of its constitutional basis. From such reactions spring objectives and tendencies to which active political forces of collectivity try to impart a definite meaning. It is difficult to foresee the result of this complexity of reactions and influences because the uncertainty of public opinion resides precisely in that its capacity does not correspond with the importance of the mission entrusted it. Concessions by the masses are not based on reason but originate from emotions and ideas; they are correctly expressed by Ortega y Gasset as "impulses bereft of logic."

In cases where public opinion has been tainted by fiction illusions become realities and the statistician who would follow his own clear and studied criterion will find himself eliminated by the politicians who adapt themselves to the opinion in force which they themselves have collaborated to establish. Henry de Jouvenel expressed this situation rather melancholically:

There are days when one asks oneself if, in international politics, appearances are not more important than reality. Public opinion is affected in spite of knowledge. There develops a kind of truth at low cost, without concern for the truth which has cost years of study and consideration. Statisticians, catering to the public opinion on which they depend, are more interested in following its fleeting impressions than their own convictions. Immediate success compensates them for having ceded to impatience; and if they follow these tactics, they may live happily. The future will undoubtedly seek revenge; but on their successors. During their existence they will have known the good fortune of being popular.

In all this movement of aspirations and tendencies, of reactions and influences, of reality and fiction, dictatorships have a noticeable possibility of maneuver, inasmuch as they dedicate themselves more readily to propaganda, to imposing doctrinary teachings, to printing or putting into action certain opinions, to rewording information and, if it is their whim, to destroying it.

On the other hand, the cold war leads to a devaluation of boundaries and governments and, in their case, of military and diplomatic organs. The great novelty of Karl Marx—according to Etienne Fournol—does not consist in his having brought the war to a close, or better yet, in his renouncing war in the diplomatic sense; on the contrary, Marx discovered the need for war and its prolongation. War exists and, of necessity, with greater furor. It has changed only in meaning. Marx has transferred the boundaries from the exterior to the interior. The boundary does not follow the periphery of the nation which has been eliminated but it follows the division of classes. The people should be able to understand one another over their boundaries without intermediation of their respective governments; even against the opposition of the governments themselves.

As a logical corollary, the delimitation of governments accompanies the disappearance of the instrumental actions through which they have perpetuated themselves. The "static" democracies are based on a juridical concept, in that they seek permanency and aspire for solidity. In the so-called "dynamic" democracy regimes, legality appears to paralyze the progressive expansion of force. It is enough to note the concession to international law that Professor Krylov, an interpreter of Soviet doctrine, makes when he defines it as:

. . . *a combination of standards which regulate the relations among the nations in the course of their rivalry, of their struggle, and of their cooperation, which express the wishes of the dominating classes in the State and guarantee the coercion exercised by the states, separately or collectively.*

Overtures by the Kremlin

Proceeding to a concrete field, we feel that we should evaluate all the "advances" and "distensive overtures" which the Kremlin makes to the West periodically. We are fully cognizant that Stalin as well as his successors have not ceased, nor will they cease, to solemnly declare that coexistence is possible between the Socialist and the Capitalist worlds, and what is more, under the best auspices. In this respect, we must not forget to add to this statement the simple and significant word "temporarily." Granted that the Soviets are convinced that the day will come when communism will be spread throughout the world, it is a word which could not help but have been uttered mentally by Stalin and his present successors. Therefore, it is only a question of time and strategy.

The situation being what it is, we must consider any sign of peaceful overtures on the part of Moscow not as a sign of good intentions in the classical sense of the phrase—we could say, a meditated communication which tends to establish a certain position, a definite thesis, aimed at a definite objective—but particularly as a propaganda measure destined to sow confusion and disorder in the good faith of public opinion; a public opinion which finds it difficult to accept the Machiavellian and inhuman logic of Communist action. This fact should, therefore, be considered before replying to any Soviet proposal. It evidently imposes a complete revision of Western theories. As our Ambassador Quaroni stated so well in a Paris Assembly conference:

We continue to be surprised at the man-

ifestations of bad faith, at the lack of scruples of the Soviets and their accomplices. It is time that we never are surprised again. The simple act of being astonished indicates that we still do not understand the kind of adversary we will have to face.

We have only to cite an example worth its weight in gold: to Karl Marx, the father of communism, belongs the most colossal contradiction when he maintained that the advent of a Socialist revolution would be the logical consequence of superindustrialism and the superconcentration of industrial property. In spite of the fact that a revolution broke out precisely in a country where capitalism was in its early stages, Soviet philosophy has been careful not to admit such an inane error and, as we know, has brazenly proceeded to adopt and interpret the Marxist doctrine, by whose contents "revolution" is spoken of today not in the same sense that Marx understood it, but with a completely new and singular meaning—the conquest of *power*. Once this objective has been attained—and it is possible regardless of the evolutionary state of society, even though this society may be economically and, therefore, militarily weak—the economic planning theoretically applicable to any type state could replace Capitalist initiative advantageously. Furthermore, I do not consider it inappropriate to recall at this time the terms of the ideological split between Trotsky and Stalin during the Chinese Civil War. Trotsky declared:

A Communist State cannot long survive in a Capitalist world: either we will have to instigate a revolution in the Western countries or at least in Europe, as quickly as possible, or Russia is lost. We are needlessly losing time and money in China.

Stalin's viewpoint was quite the opposite when he declared:

If a Communist State has the material resources and the land expansion of Russia, it can survive a long time, even in the midst of a Capitalist world. On the other hand, a revolution aimed at Europe is impossible because the bourgeoise there is organized quite differently. This is not the case in Russia. Another reason is that the proletariat in Europe is not sufficiently well organized. The exploitation of colonial and semicolonial countries has given Western capitalism many advantages, permitting it to raise the standard of living of its workers and to give them a state and a middle-class culture. Stripping the Western World of the benefit of the colonial countries, we reduce the advantages of capitalism, we lower the standard of living of the working masses, and thus lay the groundwork for a revolutionary movement. Militarily speaking, if a direct attack against Europe is not possible, we must adopt an enveloping maneuver throughout Asia and Africa.

At least in substance, the Soviet Union still remains obstinately faithful to that dogma today. Even in the postwar period of World War II, the Kremlin for the first time could not exclude the possibility of extending her domain over all of Europe which was a prey to disorganization, in complete economic and financial chaos, and greatly demoralized. Her first defeat—undoubtedly due, among other reasons, to the necessity of reorganizing her own internal affairs, more than to the fear of the atom bomb itself—has been the massive intervention of the Marshall Plan. United States aid has forced the Soviet Union to return to her Eastern strategy again; this time, as we all know, with astounding results. This does not mean, however, that the Communist foreign policy has forgotten Europe. Quite the contrary. More recent history is there to show us with concrete facts that, before and after Stalin, all Soviet diplomacy efforts have aimed at one goal: to

slow down rearmament and integration of the Western World.

Soviet Foreign Policy

With the object of evaluating the present foreign policy of the Soviet Union, in its true light, it is best to place our investigation on an internal plane. Naturally, we must approach the study cognizant of some internal events which have occurred in the Soviet Union during the last few years in order to accurately understand the present phase of the Communist policy and, subsequently, the real worth that we must attach to the "peaceful coexistence" overtures of the Soviet Union.

Since Stalin's death, his successors are inferior in strength to that of the deceased dictator. While carefully going over the first communiques issued by the Kremlin, we detect an almost anguished tone. This is understandable if we are aware that in any dictatorship the death of the dictator is of gravest concern. In such an emergency, Stalin's heirs do not have the same liberty of policy choice as had their former chief. Stalin was very capable of practicing cold war as well as distensive measures almost nonchalantly, in order to gain perfect control of the Government. His successors had to decide in favor of the latter—a fact already hinted by Stalin himself in the last interview he granted the Western press—in order to gain the necessary time to seize control of the central Government.

A policy of distension anticipated in this manner has multiple aspects. We recall the principal ones being those concerning the police, the courts, agriculture, and economic and foreign policies.

The immediate lessening of some previously established police measures, with the well-publicized liberation of a number of prisoners of war and the publication of a liberal amnesty decree, constitutes the first distensive step with regard to the police and judicial order. In the agricultural field, immediate steps are being taken to diminish state pressure on the peasants, while a general price reduction on many consumers' items is the point of departure of the new economic policy. This policy is probably based on a budget of a reasonable increase in the demand for consumers' goods—from 200 to 300 percent—and appears to anticipate a certain stabilization in the heavy industry and armaments production on a higher level not much beyond that obtained at the time of Stalin's death. It also anticipates a concentration of effort in the expansion of light industry to increase consumers' goods production, and in the increase of investments favoring agriculture. Consequently, the construction of spectacular public works has been deferred up to the present time.

A phase has finally been inaugurated in foreign policy which, resulting in mere verbal reality, strongly reacts on the West's imagination. Unquestionably, Malenkov has performed an outstanding role in the formulation of the policy of distension.

If outside the Soviet Union the initial equilibrium of the policy of distension, with the exception of the events occurring in Berlin on 17 June 1953 is brilliant, in the West, in China, and in the satellite countries, the truth of the matter is that that aura disappears within the country itself. Undoubtedly, the greatest internal difficulties stem from the agricultural sectors and from the consumers' market. As a matter of fact, if on the one side the measures favoring the peasants which were frowned upon by the old guard have more negative than positive results, on the other side they are aided by an increased demand for consumers' goods, not from 200 to 300 percent but from 6,000 to 7,000 percent. A serious defect in the operation of the entire domestic market is evident. Since a meticulous search for a new government equi-

librium is still pending in the Kremlin, the Soviet leaders are forced to confront a delicate situation with emergency measures of a transitory nature; for example, the significant sale of gold to foreign countries for the procurement of consumers' items in mass.

It is true that the armistices in Korea and Indochina partly alleviate the pressure stemming from the exigencies of armaments production but that is not enough. It would be necessary to raise the global system of the East's commerce exchange with the West to a new plane. The subsequent demands published by Moscow in this sense did not obtain the desired results.

Certain pressing exigencies loom from the direction of Peking, in the form of soliciting aid for Chinese industrialization. This only tends to aggravate the situation. They constitute demands which, while attempting to dispel any possible temptation of directing them to the Western Powers, simply cannot be overlooked. However, if resorted to, they will have great repercussions on heavy industry necessities.

The Soviet Government, nevertheless, is not in a position to change its course and should forge ahead in accordance with the plan outlined. In the Kremlin inner sanctum, the new government equilibrium is yet to be decided but the possibility exists among the Soviet leaders that there might be a return to that liberty of choice which disappeared with Stalin's death.

Whatever the concrete process through which this new government equilibrium has developed, it remains an argument of mere speculation for the time being. Let us cast aside multiple hypothesis and take notice of two events which are as concrete as they are incontrovertible: the establishment of a new government equilibrium in the Kremlin's bosom with the deposition of Malenkov, and the formal promotion to the supreme hierarchy of Bulganin and Khrushchev.

How have they arrived at the second conclusion? Probably, as the Kremlin's internal situation permitted the application of organic measures which would solve the existing problems or at least those aggravated by the policy of distension, the only possible alternatives were the reduction—no longer stabilization—of heavy industry or the curtailment of the supply and demand for consumers' goods. The first alternative was to prove impossible. The partial conversion of heavy industry would have involved not only a reduction in the armament production, considered out of place in view of Western Germany's rearmament, but also would have prohibited the carrying out of industrialization agreements with China.

The second alternative could have been carried out more effectively, either by holding only one person responsible for the collapse of the economic and agricultural policy inaugurated the day after Stalin died or by pointing out the international situation as a decisive cause for a change of course which eventually proved unpopular. From this explanation, it follows that, due precisely to the indissolubility between international and internal distension, since on Stalin's death it was necessary to practice a policy of distension in the Soviet Union, it took greater force to practice it also on the international plane. Therefore, the day after the attainment of new equilibrium in the Kremlin and the abandonment of the policy defended by Malenkov, it was necessary to return to the cold war although distension was favorable to the West.

The principal conclusion which we must deduce before the next meeting of the "Big Four" is that the Soviet Union cannot help but ask for a substantial modification of the present commerce relations between the East and the West as a basis for any treaty. Without these relations the Kremlin would be unable to again

launch the distensive policy that as has already been seen—*rebus sic stantibus*—she is not in a position to practice within her boundaries.

According to our own criterion, the unanticipated Soviet attitude of opposing Austria's independence and liberty should be interpreted as an evilly disposed attempt to create a security zone between the Soviet Union and the West, placing the territory of several neutral states—Sweden, Switzerland, and Austria—beyond the satellite countries. A proof of this is the contemporary establishment of an Eastern NATO, an organization permitting the construction of Soviet military bases along the entire Iron Curtain and only a few miles away from Vienna.

The Soviet initiative developed in Belgrade during May and June, and described in Western circles as an "unforeseen gesture" or a "sensational shock," has clearly definable objectives:

1. To split the Atlantic Treaty group practically in two, and by breaking its unity with the neutrality of Austria, the NATO group can no longer count on Yugoslavia to repair the links of its defensive chain.

2. To militarily neutralize the Balkan Alliance. The Soviet decision has a concrete significance: it is the definite superiority of the Stalinian policy of 1948 which brought about the expulsion of Tito from the Cominform. In other words, it is the defeat of the first cause which induced Tito to turn to the Western World. We must remember that that year, in the tragic isolation in which she found herself, Yugoslavia accepted Western help, but refused categorically to condition it to the most insignificant of political concessions. In her attempt not to irritate the Soviet Union, Yugoslavia was prone to delay the stipulation of the Balkan Pact and, when forced to subscribe to it, devised to empty it of any military context directed particularly against Moscow and her satellites. Furthermore, Tito energetically refused to join the Balkan Pact to the Atlantic Treaty Organization. Frankly, one cannot speak of the problem of a direct union of Yugoslavia to NATO. Finally, after a period spent reaffirming his "equidistance" with increased vehemence, Tito begins to speak of "active coexistence" and, together with Nehru, becomes its most enthusiastic champion: "Active coexistence is not only a concession which must be adopted, but it is also a goal for which we must fight." This is an excerpt from an article by Rade Vekov published on 1 January 1955 in *Revue de la Politique Mondiale* edited in Belgrade. The joint declaration made by Tito and Nehru in December 1954 states:

The nonattachment policy with regard to blocs adopted and followed by the Yugoslav and Hindu Governments is not a policy of neutrality or of neutralism, or even of passivity, but an active, positive, and creative policy which leans toward collective peace. . . .

Summary

Today it seems premature, if not illogical, to think of the reintegration of Belgrade into the Cominform orbit. We must not forget that Yugoslavia was and still is a Communist country, and that we can still have a certain degree of confidence in Belgrade and depend on her neutrality for some time, but we cannot depend on her "equidistance" between both blocs because day by day Belgrade finds herself nearer to Moscow than to the West. This truth should be translated concretely as follows: Yugoslavia is lost to the defense of the West. A breach is opened in the Mediterranean in one of the most sensitive sectors of all the Atlantic defensive barrier: Greece and Turkey are split from the Atlantic bulk, and Italy finds herself in a more delicate position than the one preceding 1948.

It is absolutely not enough to support,

as did Malenkov the day after Stalin's death, the thesis of the necessity of peaceful coexistence—a coexistence all the more vital and indispensable in the atomic age. Much more is needed to establish a truly peaceful coexistence between both worlds, although the desired benefits may be derived from the free and democratic West.

According to the Christmas message of Pope Pius XII in 1954, it is necessary to pass from the coexistence of fear and distrust to the coexistence in truth, discarding in passing coexistence bred in error. The important pontifical document would require a broad and profound study to enable us to thoroughly understand the numerous themes and arguments treated therein, all of them developed not only with insuperable "zeal and fatherly solicitude" but also with profoundly felt historical, logical, and functional perseverance.

Everything that message affirms regarding the constant theme of false pacifism seems to us to be of such vital importance that we find it necessary to repeat it in text:

A pacifist propaganda originating from those who deny all faith in God is always very dubious and incapable of attenuating or eliminating the anguished feeling of fear, unless it is conducted with the purpose and as an instrument to provoke a tactical effect of excitement and confusion. Today especially, each of the two groups in which the human family is divided tolerates the existence of the other because each does not want to perish. . . . In each of the groups fear has subjected the economic strength of the other and apprehension is alive to the effect of the most modern arms. . . . The present coexistence in fear has thus only two perspectives: either it will transform itself to coexistence in the fear of God and, afterward to the act of living together in genuine peace . . . or it will gradually contract itself in a glacial paralysis of international life, whose grave dangers are already foreseeable.

But as we mentioned previously, in order to pass from the present state of "coexistence in fear" to the state of "coexistence in truth" it is absolutely indispensable that we close the door to the "coexistence bred in error." If we do not try to do this, we will do nothing more than perpetuate the present state of ill will in which the world finds itself, precisely as a result of those erroneous systems and remedies which pretend to use economic force as the great touchstone to war and peace. To quote the Pontiff, "The antagonism existing between the two blocs cannot be overcome with purely economic forces."

Furthermore, if there exists, as is evident, relations of cause and effect between the moral and the economic worlds, these should be organized so that supremacy may be assigned to the moral world, whose duty it is to authoritatively apportion its spirit to the social economy. Therefore, only through this spirit which is a spiritual and ideal common denominator can coexistence in truth and fruitful collaboration between the two opposing blocs be realized.

In conclusion, we would like to mention the necessary indispensable caution and prudence which doctrinary knowledge and experience have imposed upon us in evaluating all the "distensive overtures" and previous offers of peaceful "coexistence" arising from the Communist world.

We must not forget again that we ourselves become quite excited when the road to peace is mentioned, without exactly understanding what it is all about. Peace is the enjoyment of justice adjusted to liberty. Peace postulates liberty. We cannot obtain liberty through peace; on the contrary, it is necessary to arrive at peace through liberty. Otherwise, it is not liberty; it cannot be peace.

BOOKS OF INTEREST TO THE MILITARY READER

COMPANY ADMINISTRATION AND THE PERSONNEL SECTION. By Colonel C. M. Virtue. 412 Pages. The Military Service Publishing Co., Harrisburg, Pa. $3.75.

BY LT COL CHARLES E. BLOUNT, *AGC*

This edition is an outstanding comprehensive guide covering all the various Army Regulations, Special Regulations, Technical Manuals, and other official instructions pertinent to company administration and the operation of a unit personnel section.

The text is divided into two parts. Part One is devoted to matters over which the company commander exercises direct control, such as supply and property records, the morning report, duty rosters, the unit fund, and the mess.

Part Two covers the responsibilities of the personnel officer. These matters include personnel management, maintenance of the service record and the enlisted and officer qualification records, discharges, pay and allowances, and travel allowances. The value of this book, which is written in a clear, straightforward manner, is greatly increased by the excellent illustrative material and the references to specific Army directives.

Both the company commander and his assistants, and the personnel officer and members of his section, will find this attractively bound book with its detailed table of contents an invaluable reference in accomplishing administrative and personnel work.

GEDANKEN ÜBER DIE SCHWEIZERISCHE LANDESVERTEIDIGUNG IM ZEICHEN NEUZEITLICHER WAFFENTECHNIK (Thoughts on Swiss Defense Considering Modern Weapons Development). By Nicholas Jaquet. 135 Pages. Verlag Helbing & Lichtenhahn, Basel, Switzerland. $0.85.

BY LT COL W. C. MAGATHAN, JR., *Arty*

This book constitutes an assessment of the problems of Swiss defense in the atomic age. The reader is carefully prepared for the key chapter, "The Swiss *Infantry* Army in the Defense" (reviewer's italics), by an analysis of major military-political factors in the Swiss power equation, defensive doctrine, the status of the infantry, tank, and artillery arms, and the impact of the atomic weapon.

Mr. Jaquet emphasizes that the *leitmotiv* of Swiss politics is neutrality. He provides us with a timely reminder, however, that "the political neutrality of the Confederation is inseparably bound up with a genuine defense of the homeland."

Much of his discussion of the impact of atomic weapons on the modern battlefield accords with thinking on this side of the Atlantic. He takes the realistic view that the requirement for a neutral to maintain a completely independent defense disappears as soon as its territory is attacked. While we emphasize the need for a war of movement, Mr. Jaquet stresses the fortified position, albeit with operational and tactical flexibility.

COMMUNIST GUERILLA WARFARE. By Brigadier C. Aubrey Dixon and Otto Heilbrunn. 229 Pages. Frederick A. Praeger, Inc., New York. $4.50.

BY COL DALLAS A. PILLIOD, *Inf*

In 2 years of guerrilla warfare Soviet guerrillas reported they killed more than 300,000 Germans, of whom 30 were generals, 6,336 officers, and 1,520 airmen. During the same period 3,000 trains were derailed, and 3,262 railway and high-road bridges, 1,191 tanks and armored cars, 476 airplanes, 378 guns, 618 staff cars, 4,027 trucks, and 895 dumps and warehouses were destroyed. Field Marshal von Manstein reported:

In 1944, in the Army Group Center, in the course of 7 hours nearly a thousand raids took place on roads and railways in the rear, and in the Crimea these raids happened every single day.

One of the major problems encountered by the Germans in their invasion of the Soviet Union was the Soviet guerrilla forces. The attacks of these nondescript irregulars were a constant drain on the life blood (supply) of the fighting forces.

Communist Guerilla Warfare is an interesting, well-documented account of Soviet guerrilla warfare against the Germans, and the German countermeasures.

FRONTIER TO SPACE. By Eric Burgess. 174 Pages. The Macmillan Co., New York. $4.50.

BY MAJ JOHN N. HIGHLEY, *USAF*

This is not specifically a space book or a treatise on space travel, but an account of how we are collecting and planning to collect the data that will permit us to travel in space. This book is about the frontier to space—the conditions at the frontier to interplanetary space that we must understand and cope with before the dreamed of space travel can be an actuality.

This volume collects all the knowledge gained from radio waves, balloons, and rockets. It relates how we will use improved rockets and, eventually, satellites to complete our probe of this unknown.

Here is an introduction to the layman on the fundamentals of rockets and rocket travel and a reference guide for the specialist. It ties together the generalities of popular writings of rocket propulsion with the technical aspects of the subject, plus collated data for students and specialists who need a handy reference book on rocketry.

COMMANDO EXTRAORDINARY. By Charles Foley. 241 Pages. G. P. Putnam's Sons, New York. $3.75.

BY LT COL WILLIS B. SCUDDER, *Arty*

The author of this volume is a former British newspaperman turned to other fields of writing. Here he proposes that Great Britain form what he terms a strategic assault force to operate far into the enemy rear areas.

His case is built around the spectacular exploits of Germany's Otto Skorzeny in World War II. Included are details of the Gran Sasso operation that led to the rescue of Benito Mussolini from his mountain prison; the abduction of Admiral Horthy's son from Budapest; and the destruction of the Nijmegen Bridge. In addition not a small amount of space is devoted to operations of Great Britain's "Special Air Service" in North Africa.

In a foreword to the book Brigadier General Telford Taylor poses a very complex problem in which he portrays the abduction of the President of the United States by strategic forces of a foreign power. While at first glance the possibility of such an incident may seem remote, it becomes more than plausible as the actions of Skorzeny unfold.

Military readers will find much of interest in this book. It presents a very strong case for the formation of strategic assault forces.

Subscriptions to the MILITARY REVIEW may be obtained by writing directly to the Editor, Military Review, Command and General Staff College, Fort Leavenworth, Kansas. In the following countries subscriptions will be accepted at the addresses listed below:

Argentina

Círculo Militar, Buenos Aires.

Bolivia

Director, "Revista Militar," La Paz.

Brazil

Biblioteca Militar, Ministério da Guerra, Rio de Janeiro.

Chile

Estado Mayor General del Ejército, Departamento de Informaciones, Santiago.

Colombia

Sección de Historia y Biblioteca del Estado Mayor General, Ministerio de Guerra, Bogotá.

Ecuador

Dirección de Publicaciones Militares del Estado Mayor General, Ministerio de Defensa, Quito.

El Salvador

Estado Mayor General de la Fuerza Armada, Departamento de Publicidad y Bibliografía, San Salvador.

Mexico

Escuela Superior de Guerra, Oficina de Divulgación Cultural Militar,
San Jerónimo Lídice, D. F.

Nicaragua

Dirección de la Academia Militar, Managua.

Peru

Air Forces

Ministerio de Aeronáutica, Academia de Guerra Aérea, Lima.

Ground Forces

Ministerio de Guerra, Servicio de Prensa, Propaganda y Publicaciones Militares, Lima.

Portugal

Revista Militar, Largo da Anunciada 9, Lisboa.

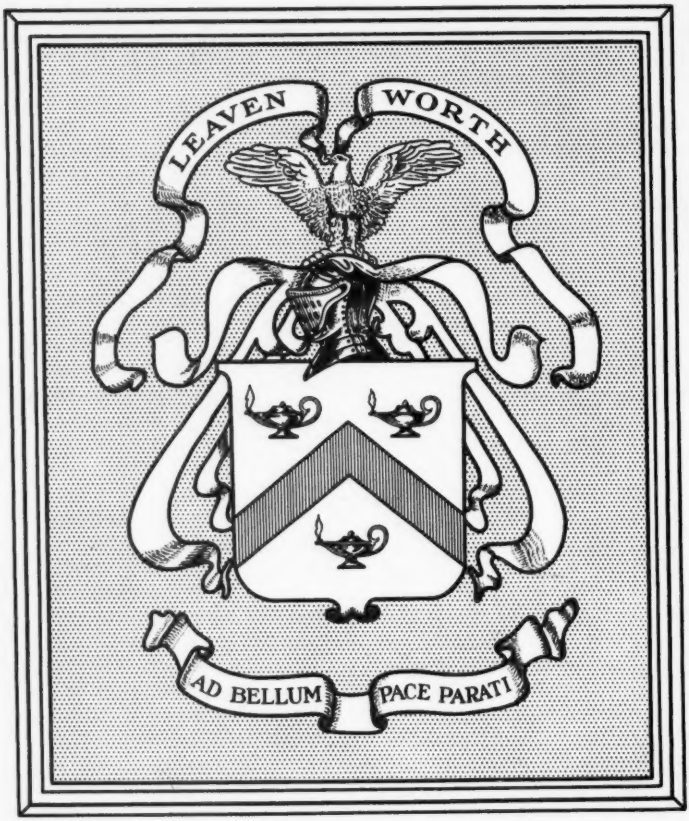
Uruguay

Biblioteca de la Inspección General del Ejército, Montevideo.

Venezuela

Negociado de Publicaciones de la 2ª Sección del Estado Mayor General, Ministerio de la Defensa Nacional, Caracas.

The MILITARY REVIEW and the Command and General Staff College assume no responsibility for the factual accuracy of the information contained in the MILITARY NOTES AROUND THE WORLD and the FOREIGN MILITARY DIGESTS sections of this publication. The items are printed for the purpose of stimulating discussion and interest, and no official endorsement of the views, opinions, or factual statements is to be implied.—The Editor.



The Army Library
Department of Army
Room 1-A-522, The Pentagon
Washington, D.C.

DISTRIBUTION:

ACTIVE ARMY (overseas distribution only):

OS Maj Comd (50); OS Base Comd (10); Armies (25); Corps (10); Div (10); Brig (5).

NG & USAR: None.